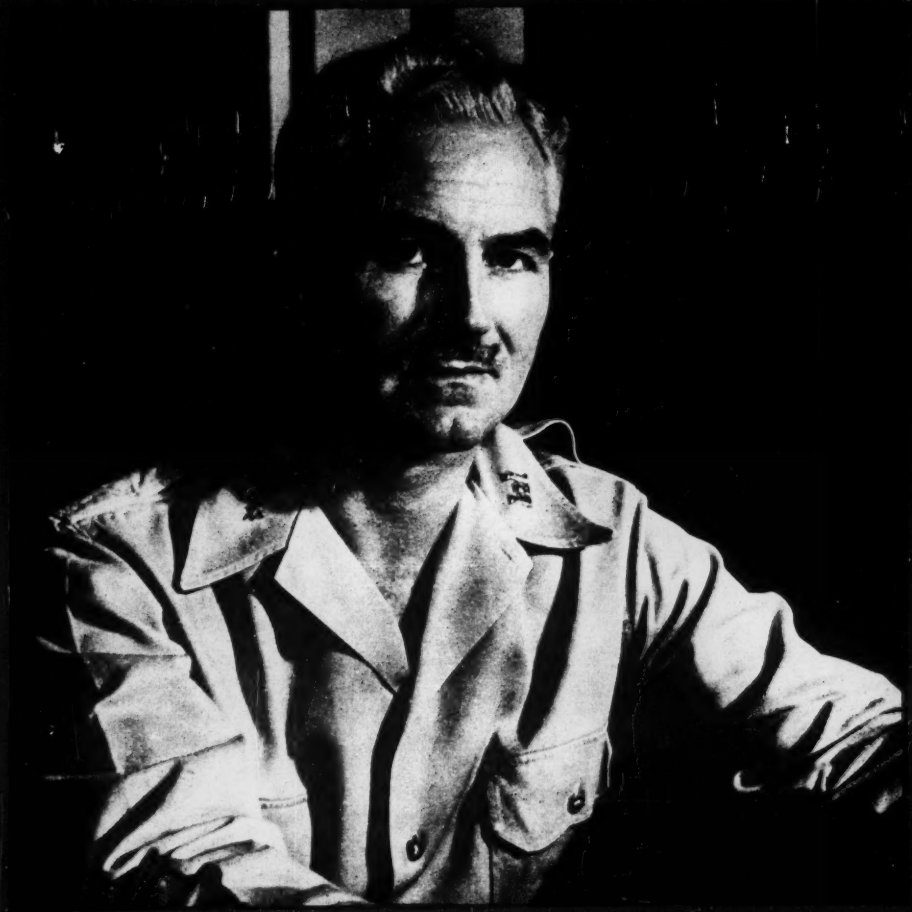
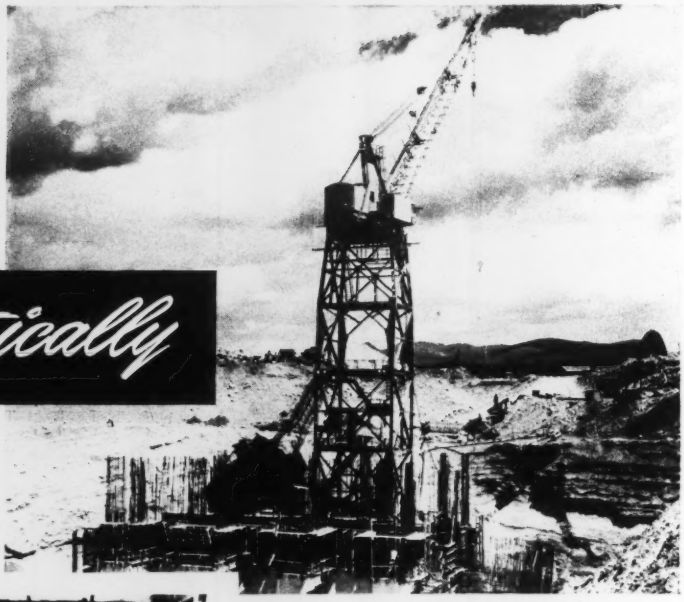


Maj. Gen. Hugh J. Casey—serves from August to Chief Engr. by [illegible]

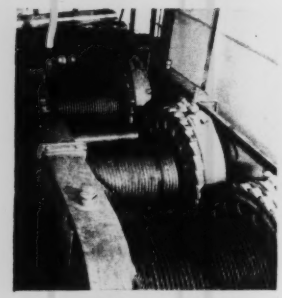
READY TO START ACTION ON SECOND STEP AT McNARY DAM

swing and hoist

... Electrically



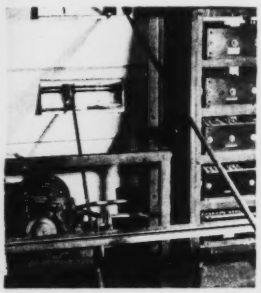
G-E equipped Colby crane at work on site of Granby Pumping Station



Hoist assembly consists of cable drums and General Electric 100-hp motor

Operator at controls of Colby crane, spotting loaded concrete buckets

Inspection and maintenance of the G-E control equipment is easy



Swing motor and resistor assembly are compact, yet readily accessible

Colby Crane Helps Granby Constructors Shorten Schedule

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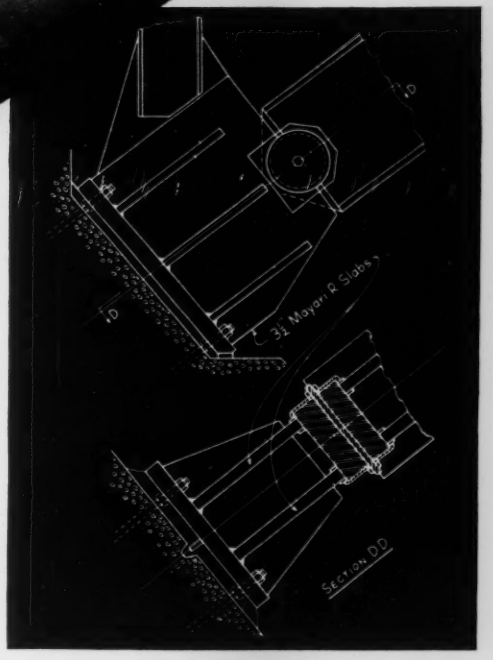
The Mayari R slabs in the shoes for the highway side of the structure measure 2½ in. thick; those in the shoes for the railway side are 3½ in.

Sketch of shoe, bearing pin and arch rib for Usumacinta River bridge, Mexico. A combination highway and railway structure, the arch measures 492 ft, 1 in. between centers of pins.



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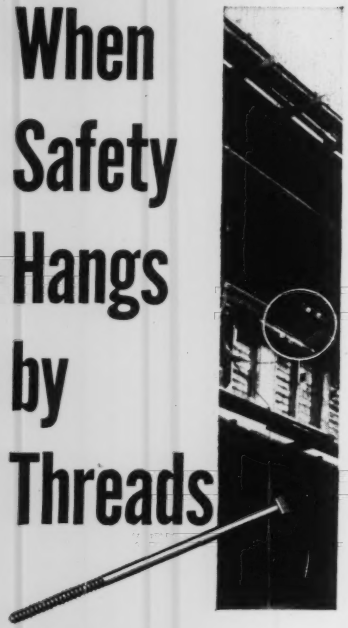

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ENGINEERING NEWS-RECORD

VOLUME 143 AUGUST 11, 1949 NO. 6

WALDO G. BOWMAN
Editor

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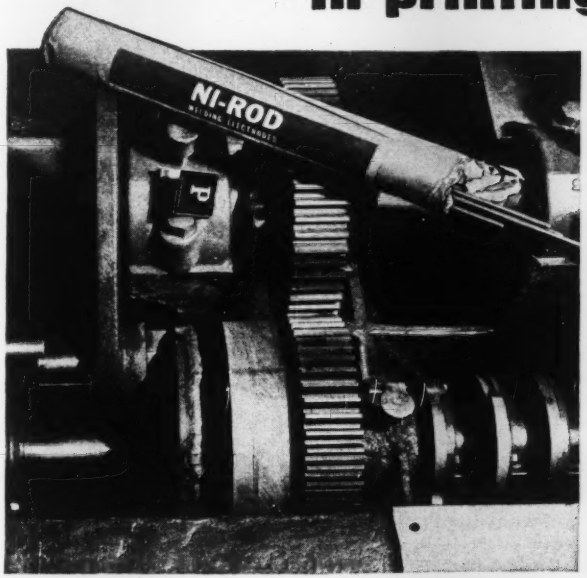
Ni-Rod *Ventured* - Time and Money *Gained* in printing press repairs



A worn cast iron cam on this Miehle vertical press was built up with beads of NI-ROD without dismantling the gear box. The welder had no previous experience with metal arc welding.

This platen cam casting from a John Thompson press had two sections broken off. Both were restored by welding with NI-ROD.

RECENTLY, a firm that specializes in the repair and reconditioning of worn printing machinery took a gamble . . . a small one, but it paid handsome dividends.

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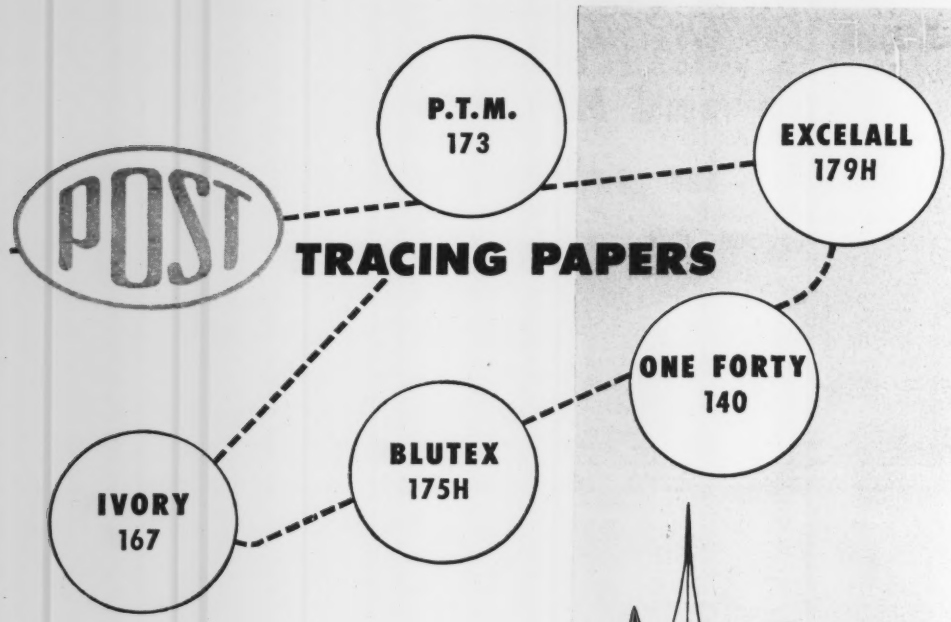

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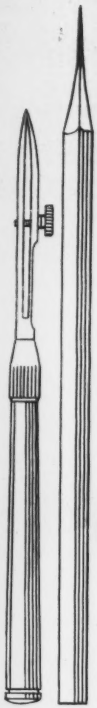

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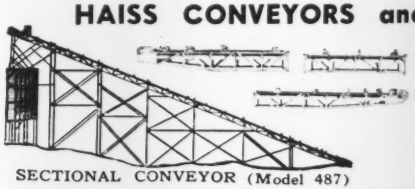

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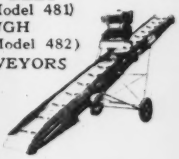

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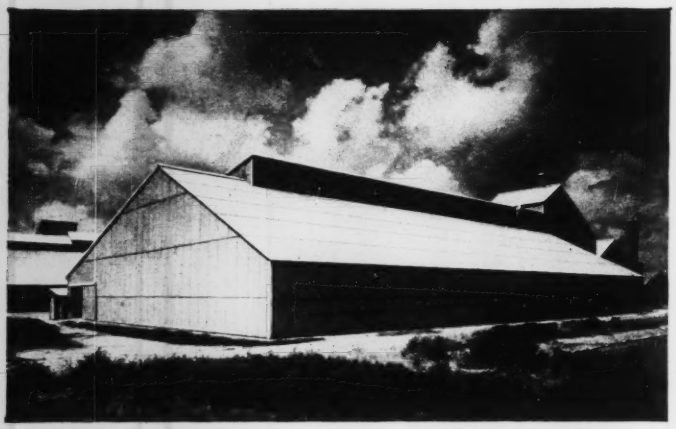

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NEWS BRIEFS

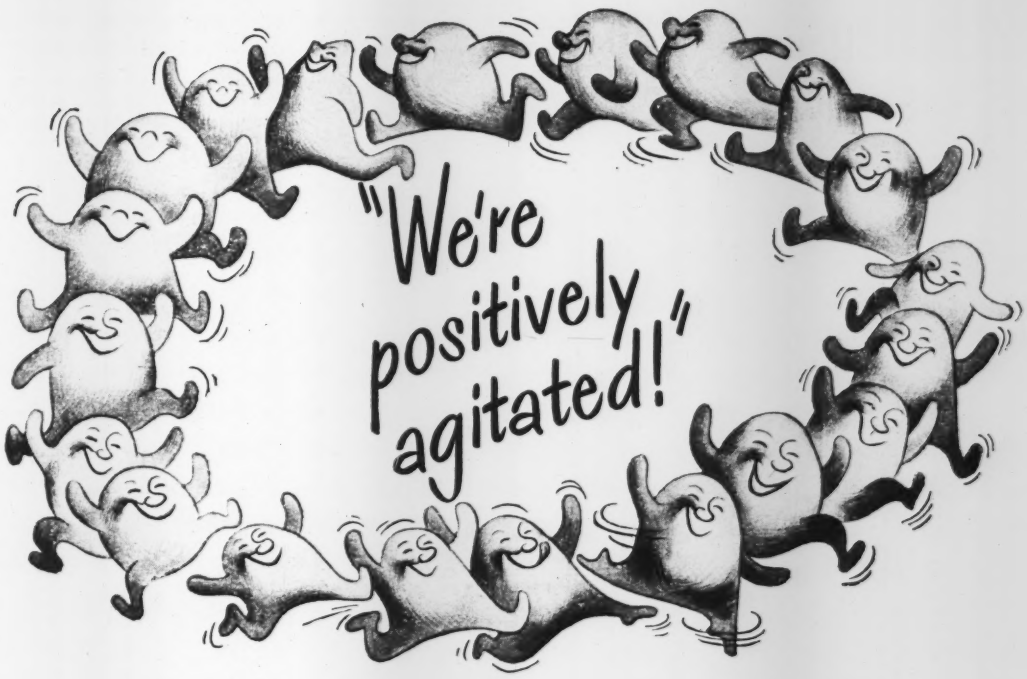
Rubber Streets—Enough specially compounded latex rubber has been obtained by Worthington, Minn., to pave more than a mile of the city's streets. The rubberized surface is said to wear longer and to be safer to drive on in wet weather than ordinary pavements. The rubber is combined with asphaltic materials to make a seal coat over regular asphalt paving.

Flood Control Compact—Governor Chester Bowles has signed into law the bill which authorizes the State of Connecticut to enter the Connecticut Valley Flood Control Compact. This provides for flood control programs throughout the New England States, including construction of dams and reservoirs in the Connecticut River Valley.

St. John Harbor Work—In addition to two wharf building contracts now in execution at St. John, N. B., repairs are being made this summer to other wharves at a cost of $250,000. One of the contracts is for $3,000,000 for wharves and sheds on the east side of the harbor, and $1,000,000 for an immigration and passenger shed on the west side. Both contracts are to be completed this fall. St. John is used heavily when the St. Lawrence River ports of Montreal and Quebec are closed by ice.

Ohio Public Housing—The Ohio legislature has enacted a public housing program for communities of the state, by passing a bill exempting housing projects from taxation, and setting the top annual income families can earn and still live there. Both measures bolster a recently-passed bill authorizing cities to rebuild slums, and seeks to qualify Ohio projects for federal aid. Tenants in public housing are limited to families whose net income is not more than $2,000 a year, plus $200 for each minor dependent. Provisions of the program include mandatory payments by the Housing Authority in lieu of taxes.

Steel Pipe Mill—A new electric welded steel pipe will be constructed at National Works of the National Tube Co. at McKeesport, Pa., it is announced by John E. Goble, president of that U. S. Steel subsidiary. The new facilities will provide for an annual capacity of 100,000 net tons of 26-in. and larger diameter electric welded and expanded steel pipe. The pipe will be produced in 40-ft. ship-



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ping lengths. These new facilities, Mr. Goble said, will enable National Tube to compete in a wider market, particularly in large diameter pipe for oil and gas pipe line construction. Work on the mill will start immediately and production of pipe is expected by March, 1950.

Indian Burial Grounds along the Columbia River in the area affected by McNary Dam will remain untouched and graves covered with water when the reservoir is created behind the dam. This agreement was reached at a recent council meeting of the Umatilla, Walla Walla, Cayuse, and Yakima tribes with Col. William Whipple, Walla Walla district engineer, Corps of Engineers, and other government representatives. The general council of the four tribes said the Indians had no objection to the impounding of water in McNary reservoir, but they desired the graves of their forebears to remain undisturbed. About 70 Indians attended the council session, conducted in Nez Perce.

THE COVER PICTURE

Back in the United States for permanent assignment for the first time since 1941, Maj. Gen. Hugh J. Casey arrived in San Francisco this week.

He is scheduled for a 21-day leave, after his latest job as Chief Engineer of the Army's Far Eastern Command. Then, at the end of August, will report to a new assignment with the Ohio River Division of the Corps of Engineers.

A 1918 graduate of West Point, General Casey was a Captain of Engineers when World War II broke out, assigned to the Phillippine command of General Douglas MacArthur. An able administrator—and also a soldier in the best tradition of the gadget-loving American Army —he made a reputation in the defense of Bataan with two not-strictly-engineering inventions—"Casey's Cookies,' a makeshift hand grenade of dynamite, scraps and split bamboo, and "Casey's Cruisers," which were improvised armored vessels and vehicles used to blast Jap soldiers out of strong positions.

He accompanied Gen. MacArthur on the long trip from Bataan to New Guinea, and was a member of the General's staff, as chief engineering officer, until Japan's capitulation. Promoted to Brigadier General for gallantry in action in 1942, he was later appointed to his present rank while chief engineer of U. S. forces in the Pacific.

Now 49, General Casey holds a degree as doctor of engineering from the German Technische Hochschule, granted him in 1935.

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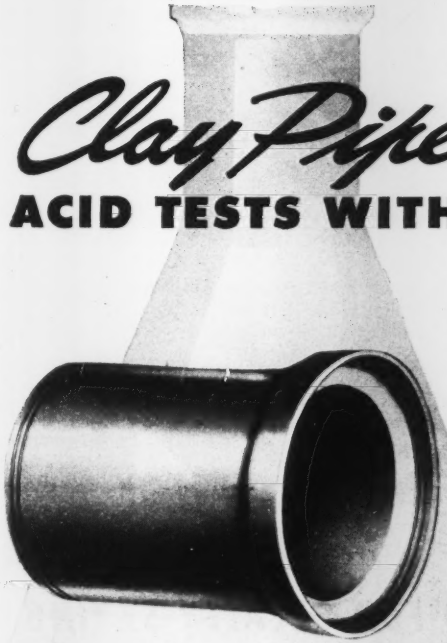

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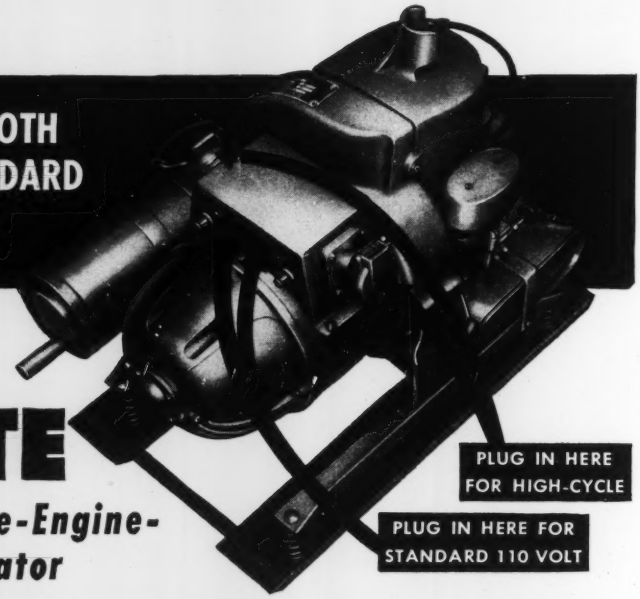

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THE CONSTRUCTION WEEK

BUSINESS BETTER—With construction leading the way, business in general seems to be recovering from its recent attack of downtrends. Part of the recovery is psychological, of course, but there's a good deal of hard fact, too. Inventories are going up, capital spending is up. And construction, which hit a 1949 record (see p. 24, this issue) of $239.3 million of contracts awarded for the week of Aug. 4, is topping the upswing. Heavy construction, as reported by ENR, is up 18 percent over last year; work put in place, estimated by the government, is up 4 percent over last year.

CONTRACTS LUMPED—Because it wants to speed and simplify its hospital building and enlarging program, the Corps of Engineers has decided to lump all contracts for any Veterans Administration hospital into a single, general contract. Only exception: elevators. Iowa City will be the last job on the old method.

STICK TO IT—With appropriations for construction and other governmental functions still in a snarl and far behind schedule, Congressmen who had been figuring on summer vacations have unpacked their bags and settled down for a hard, hot summer of work. Observers—who are betting that the administration will stick to its present program—figure that Congress will be in session at least until the middle of September.

RECORD FALLS—Earthmoving records hung up only two months ago at Davis Dam have toppled with the report that contractors at Garrison Dam moved the seemingly fantastic amount of 1,000,000 cu. yd. a week in July. Hung up by Garrison Dam Builders, Peter Kewit Sons Co. and Morrison-Knudsen, the record included 176,000 cu. yd. of earth excavation placed, sprinkled and compacted in 24 hours. The Davis record (ENR July 14, p. 32) was 730,000 cu. yd. of fill in 30 days.

TELL 'EM HOW—Construction men who for years have wanted to tell government agencies how to operate more efficiently now have their chance. President Truman last week set up an advisory committee on management improvement, to work with the Budget Bureau, as part of his attempt to streamline and smooth out operation of the executive branch. Headed by Thomas Morgan, president of Sperry Corp., the board will listen to suggestions from businessmen aimed at improving efficiency or eliminating duplication, and see to it that the suggestions are turned over to the administrator involved. And then the committee will ride herd on the administrator to see that the improvements are carried out.

COSTS FALL—Its a small straw—but it confirms recent surveys—that Washington (D. C.) builders report costs down from three to five percent—and think that's near bottom. A quick survey last week showed the builders nearly unanimous in crediting the drop to: (1) some drop in materials prices, (2) better design; (3) better labor productivity. All thought the trend now would be up again, if anything.

SPENDING CEILING—Counting heavily on possible savings due to government reorganization on Hoover Commission lines, the Budget Bureau is already enforcing a ceiling on government spending. Budgeteers are insisting that the departments must not exceed the $42 billion in the budget for all their combined projects. It doesn't mean a cutback in the program planned by the President—Budget hopes that reorganization savings by the military will care for planned increases in military spending.

RENTS RISE—Since the new federal rent act became law April 1, rent decontrol action in 246 localities had freed 704,690 rental units, affecting a population of about 6,000,000 persons. Most of this action was taken directly by the Housing Expediter—few states (Nebraska, Florida, Alabama, Texas and Wisconsin) had taken advantage of the law's provision that states could pass their own control measures to supersede federal control.

SINGING BRIDGE—Akron, Ohio's new high-level steel bridge—dedicated a month ago—has gained local fame not only for its beauty but for its vocal accomplishments. Residents say that in a high wind the structure moans like a faraway windstorm. Natives are inclined to blame the open steel grid on the deck for the musical effect.

PRESIDENTIAL OPTIMISM—Last week, President Truman signed an emergency appropriation to keep Interior in funds through Aug. 15. His supposition: by that date, the Department's money bill—upon which all Reclamation Bureau plans for fiscal '50 must wait—will have passed. This is not much more than an outside chance, now, with ECA, wages and trade hogging the Congressional limelight. Interior's bill is just one of many big money measures jockeying for position.

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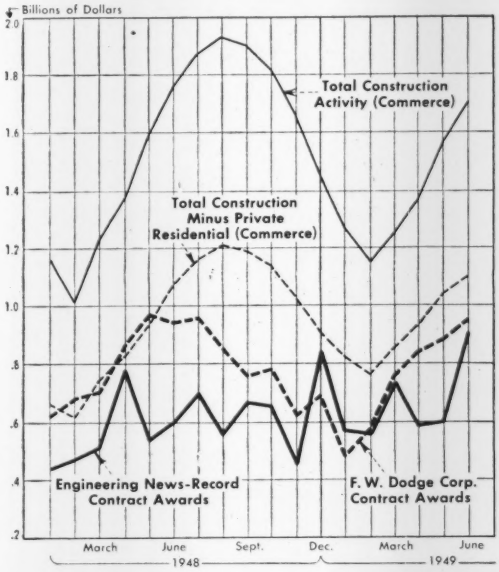
CONSTRUCTION TRENDS



Statistics on total construction activity and on contract awards frequently seem to be telling different stories. The explanation lies in differences in the way the series are put together.

Which Way Is Construction Going?—I

What construction figures give you the best idea of what is going on?

ENGINEERING NEWS-RECORD and F. W. Dodge Corporation report volume of *contract* awards from week to week, based on individual project reports in their records. The Department of Commerce reports estimated total construction put in place month by month. But a glance at the chart shows that any or all these series can be headed in different directions at one time. What's behind it all?

When you come right down to it—as this Trend and another in the near future will show—these figures all contain a lot of information in common. And, if you know the differences among them, any one of the three will give you basic trends in construction activity. But the differences between them are important—and make a big difference in the ways that they are used.

First, let's look at the government figures. They show the estimated value of construction work completed in May, for example, at $1.6 billion, of which $530 million was private housing. The homebuilding figure is based chiefly on reports gathered by the Bureau of Labor Statistics on the number of building permits issued by cities and towns. The number of permits issued, say, in April indicates the number of houses that will be started in May. From surveys over the years and field reports, Commerce estimates the amount of work that will be done on those houses in May. From that, the Department estimates the dollar value of homebuilding work in May. But we do not need to go into the details of that operation here.

The rest of the Commerce estimate—about $1 billion of construction other than housing—is based chiefly on the contract awards reported by Dodge and ENGINEERING NEWS-RECORD. From experience, and with the help of field reports and surveys, the Department estimates how much work will be done month by month on a contract for, say, a private dam once the contract is awarded. These estimates, of course, are checked and compared against reports from the public works agencies, state highway departments, and others. But the heart of the operation is to estimate volume from Dodge and ENR reports on contracts.

Commerce estimates are larger month by month than are either ENR or Dodge contract reports because they are expanded to allow for jobs that may not be reported by the two services. Moreover, the Commerce figure fluctuates less from month to month but shows wider seasonal range of activity than do contract awards.

Commerce estimates fluctuate less than do the contract awards figures in any month since they reflect work underway. Work volume on, say, highways increases fairly steadily in spring, slopes off in fall. But contract awards figures may jump suddenly in April, if a series of highway awards, for work to be done over three to nine months, comes in all at once. Or a big dam or bridge contract, or several contracts, can lift the series sharply in any week or month.

The government system admittedly is rough. But without a comprehensive collection and analysis system for construction figures, it's the best available.

The result: an estimate of construction by types which is published about two weeks after the end of the month reported on. It is the most comprehensive single figure—but it records what has happened.

Either of the series of contract award figures—on which the government figures are largely based—are more useful as indicators of what's ahead in construction. And that, for the most of the industry, is the chief use of figures.

But even the contract award figures can be pointed in different directions at any time. How can that happen?

The answer lies chiefly in differences in the way the two series are put together—and we'll try to line up those differences in an early Trend.

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So have a talk with your Dodge dealer. For remember... *only* Dodge builds *"Job-Rated"* trucks!

For the good of your business—

Switch to **DODGE** "Job-Rated" **TRUCKS**

Building for Pleasure

AN ANNIVERSARY that the whole country can celebrate with some justification is being marked this week in New York. It is the 20th anniversary of the opening of Jones Beach State Park on Long Island's south shore and the 25th anniversary of the state park and parkway system. Which is the chicken and which the egg—whether Jones Beach or the parkways came first—is difficult to say, but certain it is that the plan for a luxurious beach playground for the masses with motor cars was a lodestar for parkway development. A freeway-type highway had to be built initially to get the customers to the park, and connecting links have been progressively added until a 150-mile network now blankets the New York City area.

But the influence of Jones Beach is not local. Other parks and parkways, all over the country, stem in part from the success that attended transformation of some useless Long Island sand dunes and marshes into a huge self-liquidating recreational plant. Obviously, too, engineers and construction men can point with pride and satisfaction to Jones Beach. It opened up opportunities for a new field of activity for them—the designing and building of recreational facilities, not to mention the increased mileage of parkways. To be sure roads had been constructed into the national parks, and city amusement centers with roller coasters, bath houses, and hot dog stands had been built, but the great era of American mass recreation began back in the Twenties. And Jones Beach was one of the pioneer facilities.

Today parkways and parks are being built in ever-increasing volume. Building for pleasure has become as much a part of the American scene as building for production. Both those who enjoy the use of these facilities and those others who benefit from constructing them, therefore, owe Jones Beach and its creator, Robert Moses, a happy birthday wish. May they continue to spark other useful enterprises.

Mechanized Track Work

EXTENSION of the 40-hour week to railroad work is certain to result in greater use of mechanical equipment in railroad maintenance. Twenty-five years ago practically every track-maintenance job was done by hand; today, there is a machine to do almost every job assigned to section men. Air- or electric-driven tools cut rails, drive spikes, tighten bolts and adz ties. Curious machines having awkward looking arms with great claw-like hands move along the track and tamp ballast between the ties and around their outer ends. Other great machines crawl slowly along picking up dirty ballast at the forward end and discharging clear ballast at the rear. Ditches are cleaned by power shovels designed to work in narrow places and by other special machinery, and power mowers cut grass and weeds at almost any angle.

Fortunately for the engineers of the railroads, two committees of the American Railway Engineering Association have collected and published during recent years information about mechanical equipment that will be of inestimable value to them. Reports of the Committee on Maintenance-of-Way Equipment and the Committee on Railway Labor contain much information on types of equipment and operating costs. In many instances the equipment that is available is still in the development stage, hence there is much yet to be learned about its use. Many opportunities also lie ahead for developing better machines or more effective methods using available equipment. Compulsory adoption of the 40-hour week may in the end be beneficial to the railroads as well as to the track forces who will avoid much back-breaking labor.

Roadbuilding in Mexico

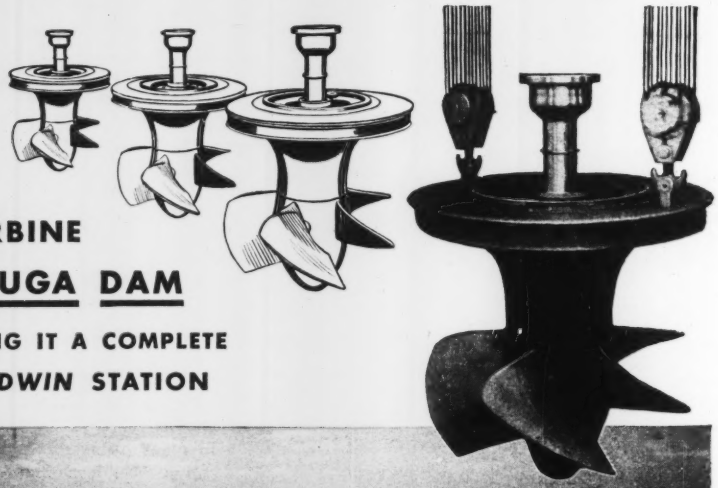
RECOGNITION of roads as the fundamental facility required for Mexico's advancement—both agriculturally and industrially—appears as one of the present national administration's most important decisions. It is a decision of much import to the U. S., for the higher Mexico's living standards the better neighbor and customer she will be.

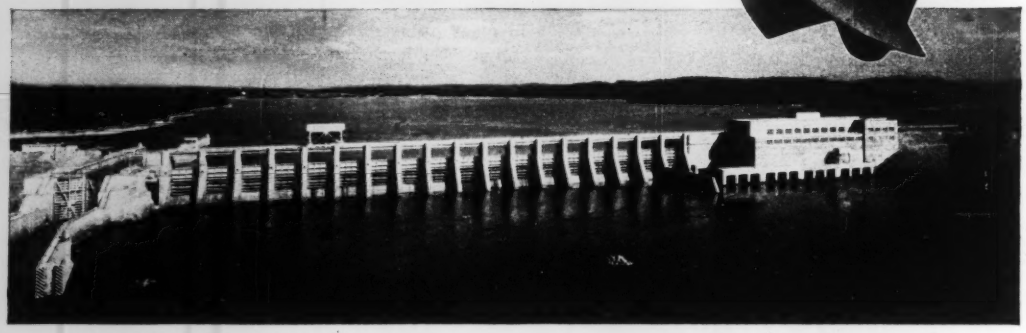
A significant element of the revived interest in roadbuilding in Mexico is the prominent part that a new organization—the Asociacion Mexicana de Caminos—is taking in the work. Made up of automobile, tire, petroleum and equipment companies, as well as other financial and business interests, it is actively engaged in promoting the better roads idea. What is most remarkable is that it is planning to take part in the actual financing of the program by contributing an annual fund of several million pesos to be matched by the federal and state governments. It is also establishing a fellowship in traffic studies for a Mexican student in the U. S., and in other ways giving tangible encouragement to the government's own program. This Mexican Road Association stems from the work of the International Road Federation, an American-formed organization dedicated to stimulating road development in the various countries of the world. What is happening in Mexico, therefore, can be credited somewhat to American private enterprise, and to its efforts to discharge some of the new responsibilities that America's recently acquired world leadership role imposes.

COMING....

THE FOURTH TURBINE FOR CHICKAMAUGA DAM

MAKING IT A COMPLETE *BALDWIN* STATION





A 33⅓% increase in capacity will be effected at Chickamauga Dam next year, when a new Baldwin turbine, now on order, is installed. This will complete the installation contemplated in the original design; the first three Baldwin turbines having been installed in 1937.

The new turbine is the adjustable-blade type, and will deliver 42,000 hp. at 75 rpm. under a normal head of 48 feet. It is designed to develop at least 20,000 hp. under a 25-foot head, and 36,000 hp. with a 36-foot head. This maximum utilization of reduced heads is of course possible because of the automatic positioning of the blades to suit each condition. Runner diameter is 22 feet, and total assembled weight is approximately 800 tons. When operating at full load, the turbine will discharge up to 8,750 cubic feet of water per second.

A total of twenty-seven Baldwin turbines have been built, or are on order, for various TVA projects. Types include Francis, fixed-blade propeller, and adjustable blade propeller types, in capacities from 30,000 to 53,000 hp. Baldwin's broad experience is available to you, in working out details on any development you have in prospect.

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ENGINEERING NEWS-RECORD

AUGUST 11, 1949 VOL. 143 NO 6

Reclamation conference sees $350-400 million program

Boulder City meeting lays out this year's schedule before final action on appropriation bill—No new major projects to be undertaken this year, Straus says

The Reclamation Bureau expects to carry out in the next 11 months a $350 to $400 million program of construction, project planning, and facility operation in the 17 westernmost states of the nation.

This was the net of a week-long conference of 100 top Bureau officials last week at Boulder City, Nev. Reclamation Commissioner Michael W. Straus explained that the program adopted at Boulder City would be tailored to fit precisely the congressional authorizations for the forthcoming year once House and Senate conference committees agree on the fiscal 1950 appropriations bill. Presently, and since June 30, the Bureau has been operating on temporary appropriations which have been cleared by Congress as stop gaps, awaiting settlement of several disputes which have prevented final passage of the Interior Department money bill. Other congressional business also has delayed the measure.

Specific goals

The Boulder City program, it is anticipated, will add irrigation water for 400,000 additional acres and almost half a million kilowatts of hydroelectric power by next July 1. No new major projects will be started under the Boulder City program during the remainder of this year.

As part of a six-year continuing program, the Boulder City schedule is aimed to contribute to water for supplemental irrigation and for 4,000,000 acres of new land by June 30, 1956. Also a part of this six-year program is 2,500,000 kw. of new power capacity to be added.

Included in the Boulder City program for the forthcoming year are 46 projects. These include 35 storage dams, eight power plants and over 200 mi. of canals. The program will yield flood control, recreation, fish and wildlife conservation, municipal water, silt control and other benefits as well as irrigation and hydroelectric power for the area.

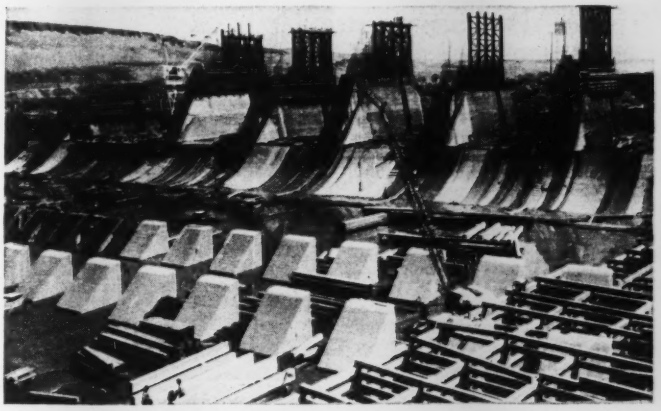
At its peak, this year's program should employ more than 35,000 persons, in USBR and contractor offices and at construction sites. Bureau sources described it as "the biggest and most challenging annual program" which has been thus far laid out for the agency.

Adjustments to be made when Congress agrees on the fiscal 1950 Interior appropriation bill should be minor as a result of the Boulder City conference, Straus declared, adding that "the West needs more water and more power so urgently that there is no room for guesswork or stumble-footed performance if this program is to succeed."

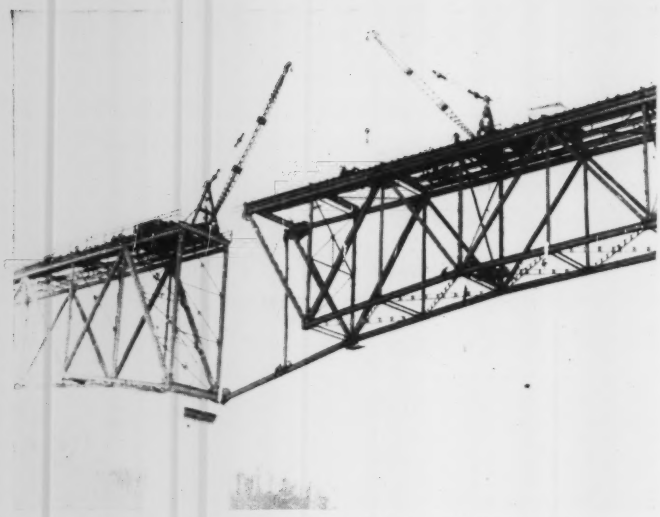
Taking a look at the future of Reclamation's western construction program, Straus declared:

"Reclamation has been in business nearly half a century. In this, the Interior Department's centennial anniversary year, we are now just about half done with the big job of developing the irrigation, hydroelectric power and other water resources which our investigations indicate we can carry out under present-day technical and economic conditions. The handwriting on the wall is plain that the West and the nation cannot and will not wait another half century for us to finish the job.

The time is within sight when the West will need the fullest possible development of its potential water resources to sustain its phenomenal growth. The program laid out at Boulder City does not contemplate starting any new major projects this fiscal year. But it does provide for the most desirable, economical, orderly rate of progress possible on projects heretofore under construction within the funds made available. We are not kidding ourselves one bit that it is not a real challenge to Reclamation—to do the job the West and the nation wants."



THIRD HUGE HARNESS for the Columbia River, McNary Dam, takes shape as workmen pour concrete for piers of the spillway section. In the foreground are concrete baffles to de-energize water which pours over the spillway into the stilling basin. Recently, a $16,000,000 contract for the Oregon side cofferdam and part of the powerhouse was let by the authorities in charge. Washington-side construction of the McNary Dam project—navigation lock, spillway and non-overflow section—is about 35 percent complete. (Wide World Photo)



FINAL MEMBERS of 1,786-ft span are put in place. (See story at right).

Tennessee, USGS agree on state mapping program

Recent signing of an agreement between Tennessee's Department of Conservation and the U. S. Geological Survey initiates a one-year cooperative state-wide mapping program.

State funds totaling $85,000—matched by an equal amount from USGS—will permit aerial photographing and topographic mapping of all areas within the state but outside the Tennessee River basin. A similar program carried out by TVA and started 15 years ago has nearly completed mapping of the entire Tennessee valley.

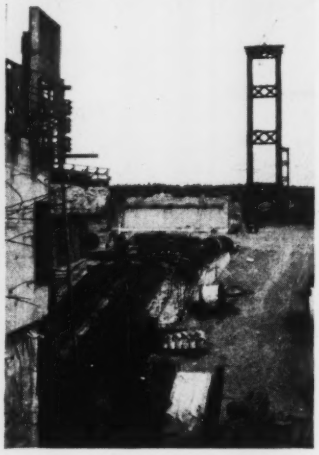
The new federal-state effort is to produce standard topographic maps on whose scale 1 in. equals 2,000 ft. These will be completed by the USGS topographic division before next July.

This cooperation between USGS and states is not new. It began in 1884, when Massachusetts signed the first such pact.

Now about 25 states have dollar-for-dollar arrangements with USGS similar to this new agreement with Tennessee. These range in size from a few thousand dollars yearly to $300,000 per year which is now being supplied to—and matched by—California for the third consecutive year. The California-USGS program is due to continue several more years—probably until the entire state has been mapped and old maps have been brought up to date.

A portion of all funds available to USGS for mapping must be matched yearly by state money. Priorities to be followed in scheduling mapping activities are determined to some extent by whether state cooperation is forthcoming.

State Geologist H. B. Burwell represented Tennessee in the negotiations preceding this most recent agreement.



CABLE ANCHORAGES for the new Tacoma Narrows Bridge have been started. Here, workmen are preparing the east anchorage. Work on the 502-ft. towers has been completed. Next will be a footbridge for workmen to get to the towers so they can weave the suspension cable. (Wide World Photo)

Bridge across reservoir has 215-ft. piers

The best in modern bridge building practice was employed in construction of a 1,786-ft. span across the reservoir behind Center Hill Dam, according to Col. H. V. Canan, District Engineer for the Army Engineer Corps' Nashville District. The bridge, on Tennessee Highway 56 between Cookeville and Smithville, is expected by engineers to be the major highway bridge of the southeastern states.

Four approach spans and four main cantilever spans make up the 1,786-ft. length, but the most imposing aspect of the structure is its height. The main pier rises 215 ft. above the foundation. Another 68 ft. are added by the truss, making its total height one and three quarters that of Niagara.

C. F. Rule Construction Co. and the Nashville Bridge Co., both of Nashville, Tenn., were the builders of the substructure and superstructure respectively. Steel forms were used in building both piers and abutments, speeding construction considerably. Pumpcrete was chosen as the best way of building the piers. Nashville Bridge used a crawler type ¾-yd. crane and a traveling erection crane with a 71-ft. boom to erect the steel. Top and bottom chords ranged from three to 13.5 tons and were as much as 60 ft. long. The finished structure provides a 24-ft. roadway with curbs 18 in. wide.

$90 million expansion ok'd for Tennessee Gas

The Federal Power Commission has approved a $90 million expansion program of the Tennessee Gas Transmission Co. under which a pipeline will be extended from northeastern Kentucky to the vicinity of Buffalo, N. Y.

Natural gas thus will be brought to new consumers. The company now provides gas from Texas to the Appalachian area.

As authorized, the expansion includes 450 mi. of main line loops along the present system; a 395-mi., 26-in. new main pipeline from Kentucky through Ohio and western Pennsylvania to a point south of Buffalo; 325 mi. of lateral lines; and additional compressor units.

All this is in addition to new facilities authorized in December, 1948, to bring gas supplies to the Pittsburgh area, and another authorization last May, to build 155-mi. of 30-in. pipeline for delivery to Oak Ridge, Tenn.

FPC dismissed "without prejudice" proposal to extend the system beyond Buffalo to the vicinity of Boston.

Consultant okays disputed outfall plan

Construction of the recently completed Hyperion outfall sewer at Los Angeles "in accordance with the plans and specifications should result in a safe and stable structure," a recent report on its design by Metcalf & Eddy declared.

The report had been ordered by the Los Angeles Board of Public Works at the City Council's request following delays in acceptance of the $3,500,000 outfall because of excess leakage.

Metcalf & Eddy had approved the overall plans for the $43,000,000 city sewage treatment plant when work on the project was begun, but did not specifically pass on designs for the outfall (ENR Aug. 5, 1948, p. 64).

Frank Flood, representing the Boston engineering firm, said that specifications calling for leakage of not more than 85 gpm. could be met. Tests made by the contractor, Guy F. Atkinson Co., during the second week of July, indicated leakage between 900 and 1,000 gpm. Next tests are scheduled for Aug. 1.

The day after the report was filed the state attorney general's office was granted in superior court a motion requiring Los Angeles and nine other municipalities to report to the court by Aug. 29 showing what they have done toward complying with a court judgment of 1946 that fixed new dates as deadlines for the completion of the project.

The Aug. 29 deadline, fixed at request of the state in an attempt to halt pollution in Santa Monica Bay, named the following defendants in addition to Los Angeles: Alhambra, Beverly Hills, Burbank, Culver City, El Segundo, Glendale, Santa Monica, South Pasadena and Vernon. Also included were South Bay Cities Sanitation District; Sanitation Districts 4 and 11, Los Angeles County; Universal Pictures Co., Inc., and A. F. Gilmore Co.

The Board of Public Works has notified the Guy F. Atkinson Co. that it expects the outfall to be ready for acceptance by Aug. 15.

WATER AT PRESSURES up to 240 psi is being used to sluice down rock from the abutments of the Reclamation Bureau's Hungry Horse Dam, on Montana's Flathead River. Excavation of approximately 1,000,000 cu. yd. of earth and rock, required to prepare foundations for this 520-ft. dam and power plant, is more than 75 percent complete. First concrete probably will be placed in the dam in September.

Californians challenge USBR water diversion

Reclamation Bureau handling of San Joaquin River water has been challenged in court by 15 California landowners.

The group, in a District of Columbia District Court suit, charges that USBR is selling water at sub-legal rates; is taking water from riparian owners without recompense, and with illegal water removal from the watershed.

Some recipients of USBR water, the suit alleges, have no riparian rights. And sales are at prices from $1.50 to $3 per acre-ft., although the water costs many times these amounts, the suit adds.

Concurrent with the filing, USBR opened its Delta-Mendota canal, whereby Sacramento River water replaces San Joaquin diversions from the Mendota area.

FPC approves addition of Nebraska gas lines

Kansas-Nebraska Natural Gas. Co., of Phillipsburg, Kan., has received Federal Power Commission approval on construction of a $2,339,000 extension of its natural gas transmission facilities. New construction will include 301 miles of main, lateral and loop pipelines to serve several towns in southern Nebraska.

License irrigator groups for Stanislaus project

A 50-year license to construct and operate a hydroelectric project on middle fork of the Stanislaus river in California has been granted by the Federal Power Commission to Oakdale and South San Joaquin Irrigation Districts. Total cost is estimated at $8,840,000.

A rock-fill dam (Beardsley) will be built to store 97,500 acre-ft. of water for a 13,500 hp. generating unit. The dam will be 275 ft. high with a 1,150-ft. crest length, including spillway.

The two irrigation districts now supply water to San Joaquin valley farms from the Stanislaus river. Storage at Beardsley dam is primarily for irrigation. Power will be sold to Pacific Gas and Electric Co.

Rural road program speeding in Kentucky

Rural roads are under contract or construction in all but three of Kentucky's 120 counties six months after the first job was let under the new farm road program.

After a letting scheduled for midmonth, the State Department of Highways will have under contract and construction 1,035 mi. of rural secondary roads in 271 projects. The program is financed by the state gasoline tax.

New group takes over Florida flood control

After 20 years life and $25,000,000 spending, south Florida's Okeechobee Flood Control District has been terminated in favor of the Southern and Central Florida Flood Control District—which has a $208 million program planned.

The new district will cover five more counties and about 3,000 sq. mi. more than the old, and is expected to bring an additional 7,000,000 acres under cultivation.

Unemployment increases, N. Y. spurs works program

New York State has $381 million available for public works and completed plans for municipal projects which would cost $384 million, Gov. Thomas E. Dewey disclosed last week in ordering the program accelerated to care for rising joblessness.

SEATTLE'S FLOATING BRIDGE proved itself an excellent money maker

Floating bridge pays off, Seattle may try another

Removal of tolls on the Lake Washington Floating Bridge, at Seattle, Wash., has increased traffic to a point where construction of a second bridge is being regarded as a possibility.

Tolls were removed after nine years of collections—19 years ahead of the date originally scheduled and 11 years ahead of the date established during the refinancing in 1945.

The concrete pontoon bridge was completed by the Washington Toll Bridge Authority in 1940, at a cost of $9,859,018. Of this, $3,934,875 was a PWA grant and the balance came from a revenue bond issue. Tolls were 25 cents for a passenger car and driver, five cents for each additional passenger. Commuters got a rate of about 19 cents.

Revenues exceeded expectations substantially, largely because of a wartime increase in population that resulted in rapid development of the area across the lake from Seattle. The bridge eliminates more than 14 miles of travel through heavily congested residential areas.

Although tolls have been removed, $1,490,000 in bonds remain outstanding. There's sufficient revenue on hand to retire them, but the Authority chose to let them run through 1951 rather than pay a retirement premium. The bridge hasn't been toll-free long enough to determine how much of a permanent traffic increase is likely beyond the daily average, under tolls, of 9,180. Complete traffic studies next year will determine feasibility of a second bridge to be built north of the existing one.

U. S. finances state pollution study

Provisional allotments totalling $850,000—to states, territories and the District of Columbia for grants to study water pollution resulting from industrial waste—were announced last week (Aug. 2) by Federal Security Administrator Oscar R. Ewing. The allotments appear in the accompanying table, with the names of the state agencies designated to cooperate in the program.

A total of $2,200,000 has been appropriated for the Federal Security Agency to initiate the nation-wide program of water pollution control and prevention which the act calls for, but on which only preliminary planning has been possible up till now.

The appropriation furnishes $850,000 for the grants to states announced last week; $150,000 for allotments to state and interstate agencies for special studies which are of national or sectional importance; $1,200,000 for operation, research, administration and planning by the Public Health Service. Allotment of the $150,000 has not yet been made.

Before funds may actually be released for study of industrial waste problems, applications setting forth specific programs must be approved by the Public Health Service of the Federal Security Agency. A number of applications already have been received.

Amounts provisionally alloted to states, territories and the District of Columbia were determined by Surgeon General Leonard A. Scheele, of the Public Health Service, after review of pollution problems in various areas.

STATE	AGENCY	PROVISIONAL ALLOTMENT	STATE	AGENCY	PROVISIONAL ALLOTMENT
Alabama	State Dept. of Health	$20,010	New Hampshire	Water Pollution Commission	10,123
Arizona	State Dept. of Health	10,388	New Jersey	State Dept. of Health	18,085
Arkansas	Water Pollution Control Comn.	17,396	New Mexico	Dept. of Public Health	10,372
California	State Dept. of Public Health	27,370	New York	State Dept. of Health	35,326
Colorado	State Dept. of Public Health	11,385	North Carolina	State Board of Health	23,178
Connecticut	State Water Commission	12,296	North Dakota	State Dept. of Health	9,842
Delaware	Water Pollution Commission	9,079	Ohio	Dept. of Health	25,780
District of Columbia	Health Dept.	10,304	Oklahoma	State Health Department	16,723
Florida	State Board of Health	15,198	Oregon	State Board of Health	12,208
Georgia	Dept. of Public Health	20,386	Pennsylvania	Sanitary Water Board, State Dept. of Health	34,227
Idaho	Dept. of Public Health	9,969	Rhode Island	Dept. of Health	10,127
Illinois	Sanitary Water Board	26,078	South Carolina	State Board of Health	16,978
Indiana	Stream Pollution Control Board	18,321	South Dakota	Committee on Water Pollution	10,069
Iowa	State Dept. of Health	15,999	Tennessee	Stream Pollution Control Board	19,737
Kansas	State Board of Health	13,697	Texas	State Dept. of Health	30,197
Kentucky	State Dept. of Health	19,698	Utah	State Dept. of Health	10,239
Louisiana	Stream Control Commission	17,805	Vermont	State Water Conservation Board	9,559
Maine	Dept. of Health & Welfare	10,941	Virginia	Water Control Board	17,774
Maryland	Water Pollution Control Comm.	13,216	Washington	Pollution Control Commission	13,473
Massachusetts	Dept. of Public Health	18,780	West Virginia	State Water Commission	15,039
Michigan	Water Resources Commission	22,310	Wisconsin	Committee on Water Pollution	16,808
Minnesota	Water Pollution Control Comnm.	16,982	Wyoming	State Dept. of Health	9,180
Mississippi	State Board of Health	19,637	Alaska	Territorial Dept. of Health	9,212
Missouri	Dept. of Public Health and Welfare	19,559	Hawaii	T. H. Dept. of Health	9,978
Montana	State Board of Health	9,619	Puerto Rico	Commission for the Control of Bodies of Water	19,919
Nebraska	Dept. of Health	12,021			
Nevada	State Dept. of Health	8,758	Virgin Islands	Dept. of Health	8,645

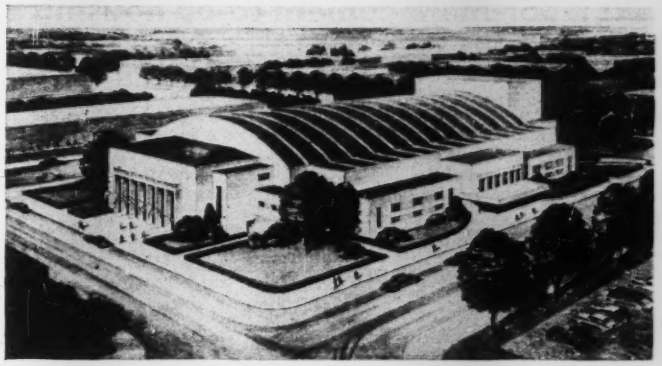
Ammann & Whitney given first CRSI annual award

Ammann & Whitney, consulting engineers, won the first in a new series of $500 Annual Awards sponsored by the Concrete Reinforcing Steel Institute. Presentation was made July 21 at the Institute's convention at White Sulphur Springs, Va.

The award was based on 30 years of research by C. S. Whitney, which was described as an "outstanding contribution to the development of reinforced concrete construction." The research covered concrete arch bridges, thin-shell arch buildings and Whitney's plastic theories of concrete design. Also cited was Whitney's application of this research to recent structural designs by Ammann & Whitney.

Large economies have come from this work, in general building construction and in the construction of a number of thin-shell concrete arch roof structures, as illustrated by their twin-span hangar for American Airlines at Chicago, (ENR April 24, 1947, vol. p. 704) the Alabama Livestock Coliseum, at Montgomery, and the Onondaga County War Memorial Auditorium, Syracuse, N. Y. Each of these was estimated to cost less in concrete than in structural steel. This development in the design of long-span buildings is of considerable importance in view of today's costs.

H. C. Turner, Jr., president of the Turner Construction Co., made the presentation. More than 100 member companies were represented at the convention.



PRIZEWINNING PERFORMANCE in the field of thin-shell concrete arch buildings is exemplified by the Onondaga County War Memorial, Syracuse, N. Y. This is one of the buildings cited by the Concrete Reinforcing Steel Institute when it awarded the first of a new series of $500 Annual Awards to Ammann & Whitney.

Pennsylvania nears end of anti-pollution drive

Pennsylvania's drive on anthracite pollution of the Susquehanna River watershed is moving into its final stages, the Sanitary Water Board announced.

On the heels of moves which prevent silt and anthracite fines from all 47 colleries of the Schuylkill River watershed from reaching the streams, 114 of 136 Susquehanna watershed colliers have obtained permits for desilting systems, and most of them are operating, with the rest under construction. On the Lehigh River watershed, three of nine colleries are operating such systems, three don't need permits since they don't discharge to streams, and three have applied.

Principal casualties of the campaign which Pennsylvanians used to insist could never be carried out are the coal dredgers who made a living for years by siphoning fines from the river beds.

VA hospitals to be let on single contract basis

Corps of Engineers contracts for veterans administration hospitals in the future will be advertised and awarded as single, general contracts including all but elevator installation.

This recently adopted change in policy has come about as an effort to simplify and speed up a program of building for the VA which now has 38 hospitals under construction or being enlarged and another 35 in various stages of planning.

It has been the policy to invite bids on both the whole job and on any one or all of four or more separate phases of the work—normally the building, electrical, mechanical and outside facilities. However, postwar experience shows that in relatively few cases do separate bids combine to form the lowest total. On only six of 30 hospitals let in the past two to three years were the separate awards made.

Simplification of the administrative problems in running several hospital construction projects simultaneously is a major objective of the Corps in advertising all jobs as single contracts. Engineer Corps personnel will no longer be necessary at the construction site in the general contractor capacity. In the future, all jobs will be awarded to general contractors answerable for all portions of the work directly to the District Engineers. Problems of allocating blame for uncompleted or unacceptable work will now rest in every case on the prime contractor.

One factor which favorably influenced the decision to discontinue advertising for bids on separate phases was the definite trend toward lower bid prices. On the New Orleans, La., veterans hospital for which bids were opened Aug. 2, the low bids—general contract plus elevators—totaled $8,037,000, whereas the Engineers estimate for the work was $8,308,000. Robert E. McKee, Dallas, Tex., submitted a $7,687,000 bid on the hospital and Otis Elevator Co. entered a $350,000 tender on the elevators.

Only one more hospital is still to be bid on by the old method; that is in Iowa City, Iowa. The next three to be let—in Kansas City, Mo., Baltimore, Md., and Birmingham, Ala.—will all go under general contracts.

Army orders rebuilding of Arthur Kill bridge

Staten Island Rapid Transit Railway Company has been ordered to reconstruct its bridge across Arthur Kill, between the island and Elizabeth, N. J.

Issued by Col. W. W. Wanamaker, the Army's New York District Engineer, the order requires that the company provide a vertical lift span with a horizontal clearance between fenders of 500 ft. and a vertical clearance above mean high water of 31 ft. in closed position and 135 ft. in raised position. Center of the new span will be about 158 feet east of the existing swing span.

The company is required to submit general plans and specifications in 90 days and to take bids and begin construction thereafter. Cost will be apportioned between the company and the federal government, in accordance with law.

Asks labor-management co-op housing

A national housing cooperative—backed in part by labor union financing and aiming to build five to 10 percent of the nation's housing needs annually—was called for last week by New York State's Housing Commissioner Herman T. Stichman.

To bolster his proposal, Stichman cited this evidence:

1. A $400,000 saving has been realized on the 800-unit Bell Park Gardens cooperative development in New York City. It will yield a 40 percent dividend on the down payments of its veteran owners and is the result of "maximum productivity" by workers and the efficiency of the contractors. It was the first state-sponsored cooperative housing project.

2. A 500-apartment extension of the project is being planned nearby as a result of the "excellent results" of the first cooperative project.

3. Joint sponsorship by the International Brotherhood of Electrical Workers, New York Local 3, and certain metropolitan employer groups of a non-profit cooperative plan to build 2,000 garden apartment units at a cost of $20,000,000.

In the Bell Park Gardens project, a special clause was declared by Stichman to be responsible for the savings. Negotiated by Stichman and agreed to by Roth-Schenker, Inc., the contractor, the clause provided that the housing was to be built according to specification at fixed price, the contractor absorbing any loss, and keeping any profits up to 5.5 percent of the total cost. Profits between 5.5 and 7.5 were to be split evenly by the builder and the cooperators. All profits beyond 7.5 percent were to go to the cooperators. Stitchman said the clause was responsible for the increased productivity which resulted in the $400,000 saving. It was realized because workers knew that increased effort would not merely increase profits but would help modest-income cooperators, he said.

Down payments at Bell Park Gardens averaged $240 per room. Carrying charges, including amortization, repairs and maintenance, are expected to average about $14.10 per room monthly, which is half the rental of equivalent new housing in the area.

These are the things Stichman expects from his proposal of labor-employer cooperative housing:

1. Good homes at prices attractive to lower-middle income purses.

2. Extra incentive for labor to bring down home building costs.

3. Employment for building trades workers at a time of less than full employment induced by high building costs.

4. Encouragement of apprentice training, which would lessen average age in the trade and thus boost productivity.

5. Encouragement for private builders to cut their costs by the labor example.

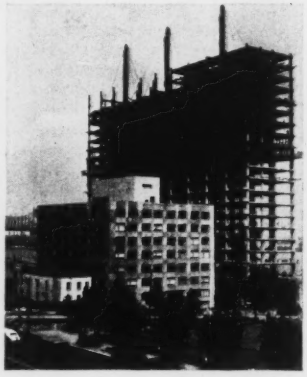
Two-level expressway predicted for Houston

Houston, Tex., may be no more than a decade away from an elevated highway through its business section which will rise as high as six stories—and stack up the motorists four deep at one point. At present, it's estimated to be a $30,000,000 job.

Houston office employes of the Texas Highway Department already have some of the expressway sketched. Five miles of double-decked construction are envisioned—four lanes wide—from the Ship Canal area east of Houston to Eureka, on the west.

There's a possibility of roof-top parking on the MK&T building, and at one downtown point, motorists would have to choose between a ground level road, an elevated road which already exists, and the two-lane expressway. The upper deck would range from 40 ft. above ground to six-story level.

The expressway plan is only one of several proposals, but some engineers say it's the most likely.



UN SECRETARIAT building, on New York's East River Drive, keeps rising steadily. This picture, looking north, shows the Queensborough Bridge in the background. (Keystone Photo)

Gen. J. H. Stratton joins N. Y. engineering firm

Brig. Gen. James H. Stratton, Corps of Engineers, U. S. Army, who retired as division engineer, New England division, U. S. Engineers, last July 31, has joined the Knappen Tippetts Abbett Engineering Co. of New York as a special partner, it was announced last week.

Probably General Stratton is best known for his distinguished service in the war when he served as chief of the engineering branch of the Construction Division, Corps of Engineers, and later assistant chief of staff, G. 4, Headquarters, European Theater, when he had charge of the famous "Red Ball" Highway and other transportation facilities. The "Red Ball" played an outstanding part in supplying the Allied "breakthrough" in France.

Prior to the war, General Stratton who was graduated from West Point in 1920 and later took a C.E. degree from Rensselaer Polytechnic Institute, had many assignments on river and harbor work. He served as district engineer on the construction of the Conchar and Joe Martin dams in New Mexico and Colorado for flood control, power, and irrigation and for a number of years was active in the canalization work on the Mississippi River.

After the war he first served as Assistant Chief of Engineers, Washington, D. C., and then went to Panama to conduct the studies for a sea level canal. For the last year, he was division engineer of the New England division, in charge of extensive flood control and navigation work as well as military design and construction and the construction of four Veterans' hospitals.

In 1944, Gen. Stratton was awarded the Legion of Merit for his services with the Chief of Engineers.

Report large bond offer for Cuban works program

Prospects of a vast construction program of self-liquidating public works for Cuba were being discussed in New York last week. Loan figures which dotted the discussions ranged from $40,000,000 to $100 million—to be raised by bond sales in the U. S. market.

First Boston Corp., an investment house with which the Cuban Government was reported to be discussing the flotation, was asserted by the New York Times to have confirmed that negotiations were in progress and the transaction would involve a registered security issue. This was on the basis of a $40,000 to $50,000,000 issue.

From Havana, also via the Times, came word that the Cuban Government had reached a tentative agreement to sell three issues—$40,000,000 the first year, and $30,000,000 in the second and third years. Taxes now being used to retire an Export-Import Bank loan would be used to service the new proposals after final retirement of the outstanding loan, it was reported.

Dr. Guillermo Belt, former Ambassador to Washington, was quoted as asserting that any foreign loan would hurt Cuba, and that no such loan is needed since the government has $580,000,000 in cash.

Linzell succeeds Sowers as Ohio works director

Samuel O. Linzell, Columbus, assistant Ohio director of highways, has been named state director of public works by Gov. Frank J. Lausche, effective at once, to succeed George B. Sowers, Cleveland, whose term expired.

Linzell, who has been chief engineer as well as assistant director of highways, had been an engineer with the state highway department for the last 22 years. He received his engineering degree from Ohio State University in 1922, and joined the Ohio Highway Department in 1928 when he entered the Washington County resident engineer's office. He was transferred to Columbus in 1933, and since then has been with the central office of the highway department as assistant purchasing engineer, purchasing engineer, assistant chief engineer of maintenance, and in 1946 was named assistant research engineer. During the current year he served as assistant highway director. He will be in charge of about $75,000,000 in new construction.

FAST RELIEF from a critical water shortage at Gasport, N. Y., came when the Air Forces flew in a diatomaceous earth pressure filter from the manufacturer's factory at Providence. The filter processed up to 90,000 gal. daily of impounded creek water.

Tunnel fire probes ask new safeguards

New York City's fire chief and the National Board of Fire Underwriters both have commented recently on the May 13 blaze which knocked out the Holland tunnel between Jersey City and New York.

Fire Chief Peter Loftus was the more pungent. He said it appeared that "in designing the water-supply standpipe system, the designers believed a supply system capable of taking care of a 'one vehicle fire' would be sufficient. In this instance . . . 12 vehicles, some over 10 tons capacity, were virtually . . . consumed by the flames.

"Several hundred feet of six-inch steel and concrete ceiling slab crumbled and collapsed onto the roadway due to the high heat volume and high temperatures developed. This occurred before sufficient water streams could be set in operation to absorb the large volume of high temperature which developed within a period of seconds."

The Underwriters noted that a major disaster might have occurred, and made these recommendations, among others:

1. A safe routing for dangerous cargoes should be developed through any area containing tunnels, bridges or congested streets.
2. Shippers should notify carriers of dangerous cargoes.
3. Such data should be given drivers.
4. Tunnel exhaust fans and ventilating systems need greater safeguards against fire.
5. The tunnel seems to need more fire fighting equipment, particularly extinguishers for different types of fires. Use of automatic sprinkling systems for tunnels should be studied.
6. Legislation governing transport of dangerous cargoes should be standardized and stiffened.
7. A cooperative program to educate truckers should be undertaken.

Sentiment—and antiquity —win White House verdict

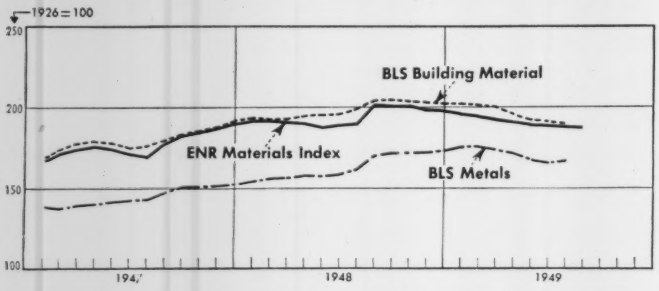
Tradition triumphed in an agreement reached last week (Aug. 2) by the commission named to decide the fate of the White House. The presidential mansion will retain its exterior integrity and be reinforced and repaired from within.

Strong arguments had been advanced for razing the 150-year-old structure and building a replica of marble. Estimators proved that complete rebuilding would be more economical than repairing. Nevertheless, sentiment—including that of President Truman—was on the side of those who chose the plan to remodel the national landmark.

Public Buildings Administration will act for the commission in advertising the project, will open the bids and—in conjunction with the commission—award the contract. General contractors interested in bidding are asked to send to PBA for a questionnaire. A hand-picked few of the best qualified will be invited to bid after Sept. 1.

Construction cost is estimated at $4,160,000 exclusive of engineering and architectural fees; building time is set at 660 calendar days.

CONSTRUCTION BUSINESS



Cost of construction materials off 7%

The pinch is off materials prices, at least for the time being.

A seven percent decline in costs of construction items is reflected (above) in both Engineering News-Record's material cost index, and the Bureau of Labor Statistics index of wholesale building materials prices.

For the ENR index, the peak came a year ago (August, 1948: 201.5). The most rapid decline was in the early months of this year. Now the curve is leveling off.

The BLS index scored its high (204) in September, 1948, easing gradually until April, when it began a sharp three-months, nine-point descent. By mid-July, this decline had lost momentum, however, and indications are that the curve will not drop any more in the immediate future.

Reasons for the sharp April decline in the BLS materials index hold true as well for the BLS index of metals and metal products, also shown above. Non-ferrous metals prices broke in March of this year, bringing down with them such items as red and white lead, paints and copper wire, which are strongly weighted in the BLS index but not included in ENR's heavy construction materials index.

In the BLS index of wholesale building materials prices, paints are weighted at 17.43 percent and copper wire at 3.34 percent. The weight given four types of lumber is altogether 39.96 percent. This index is designed primarily for application to residential building, and also covers: two grades of brick (5.01 percent); portland cement (4.82 percent); mill work, doors (6.02 percent); heating boilers (2.95 percent); structural steel shapes (2.98 percent); cast iron pipe (5.92 percent); prepared roofing, shingles (4.64 percent); and crushed stone (6.93 percent).

The ENR index, on the other hand, is for all types of construction, and reflects price changes of only three basic materials: structural steel, cement and lumber. ENR's 20-cities average price for Douglas fir and yellow pine 2x4s started down in August 1948, and has been the primary cause of the index's decline. From $92.24 per M b. ft. at the peak, lumber has fallen 15 percent to the current level of $78.43 per M. Cement prices have come down only in the last three months, returning to $2.95 per bbl. from a May ceiling of $2.99 (bulk). Mill prices of structural steel shapes have not changed in the last year at any of the three sources (Pittsburgh, Chicago and Birmingham) used in the ENR index.

In the past 90 days, the ENR 20-cities average price for yellow pine has leveled off perceptibly, and Douglas fir prices may have hit bottom. August's average price for Douglas fir 2x4s is $85.69, up $0.62 per M b. ft. from the July quotation.

Highway bids down 6%

Highway bids in the second quarter of 1949 are down 6 percent from their record high of the 4th quarter last year as measured by the composite mile bid price index computed by the Bureau of Public Roads.

At 155.5 for the second quarter, the index is 3 percent lower than in the first quarter when it was 2.5 percent below the peak. The index is now just below its value a year ago, 155.9 for the second quarter of 1948.

The common excavation index is down to 116.8, seven percent below a 3rd quarter 1948 high of 125.4; the concrete pavement index is down to 165.9, six percent below a 4th quarter peak of 176.7; and the index of bid prices on structures is down to 213.5, showing the sharpest decline, 9.5 percent, from a 4th quarter high of 235.7.

Ohio compensation rates off

New workmen's compensation insurance rates have been announced in Ohio (effective July 1), with insurance costs to employer down in a majority of cases from the 1948-49 rates published in the March issue of ENR.

In the classifications listed below, plumbing and steamfitting compensation rates are off the least at one percent, and marble and masonry work off the most at 29 percent. The new marble masonry rate is $1.05 (including a 5-cent occupational disease rate), compared with $1.48 in 1948 (including a 15-cent disease rate).

Only insurance rate to increase among those listed is for bridge building and structural iron erection, up 12 percent to $3.97 per $100 of payroll. Concrete work and waterproofing rates are unchanged.

This is the second decline in two years for some of these classifications: bridge building and structural iron erection rates were $4.25 in July 1947; plumbing and steamfitting $0.85; carpentry, general, $1.05; plastering and lathing, $0.65; general building $1.20; pile driving $8.00; highway bridge and heavy construction $1.70, and sewer and tunnel work $3.90 (including a 20-cent disease rate).

Classification	Rate per $100 payroll 7/48	7/49	% down
Sand & gravel diggers	$2.72	$2.08	24
Marble & masonry work	1.48b	1.05a	29
Br. bldg. & str. ir. erect.	3.54	3.97	+12
Plumbing & steamfitting	.71	.70	1
Carpentry, general	.97	.83	14
Plastering & lathing	.56	.49	13
Concr. wk. & waterproofing	.75	.75	..
General building const.	1.01	.98	3
Pile driving	7.69	6.17	20
Sew. pl. & waterwks. const.	2.93	2.33	20
Highway br. & hvy. const.	1.18	1.35	9
Sewer & tunnel work	3.00b	2.85	5
Pipeline const. & ditch digging	2.40a	1.78	26

Note: All basic rates include a two cent occupational disease rate, except the following: a) .05 b) .15

Contract record for 1949

Engineering construction hits its 1949 high of $239 million for the week ending August 2nd. This has been topped only once since the war, by a $362 million-week in December, 1948.

Waterworks went over the top with a postwar high of $46 million for the week, of which $44 million was the East Delaware Tunnel for the New York Board of Water Supply.

Industrial building was a near high for the year at $62.8 million (second only to a $69 million week in July).

BIDS AND BIDDERS

(Major project news received after Construction Reports, page 60, went to press.)

Pipeline—Tennessee Gas Transmission Co., Houston, Tex., plans to extend natural gas pipeline 383 miles from Buffalo, N. Y., to Worcester, Mass., including appurtenances and system capacity expansion. Estimated cost is $94,000,000.

Power Station—Duquesne Light Co., Pittsburgh, awarded contract for the Elrama Power Station to Dravo Corp., Pittsburgh. The plant, which will contain two 95,000-kilowatt steam turbine generators, is now being designed by the company engineers and will cost $28,000,000.

Veterans Hospital—Veterans Administration, Wash., D. C., has reinstated plans for Neuropsychiatric Hospital near Salisbury, N. C., to cost about $17,000,000. This project was cancelled early in 1949.

Maintenance and Repair Shop—Port of New York Authority, New York, N. Y., will open bids Aug. 25 for automotive maintenance and repair shop, adjacent to Union Motor Truck Terminal, New York City.

Water Pumping Station—Black & Veatch, Kansas City, Mo., have been selected as consulting engineers for pumping station for South Memphis by the City of Memphis Light, Gas & Water Commission, Memphis, Tenn. Estimated cost of project is $15,000,000.

Open Hearth Furnaces—F. H. McGraw Co., Middletown, O., will construct three 225-ton open hearth furnaces at East Works of the Armco Steel Corp., Middletown, O., to cost about $12,000,000.

Overpeck Sewage Treatment Plant—Bergen County-Hackensack River Sanitary Sewer District Authority, Hackensack, awarded contract to Terminal Construction Corp. and Young Foundation Corp., Wood-Ridge, N. J., for sewage treatment plant, Overpeck Valley Joint Sewage Works, at $4,246,775. Bogert-Childs Engineering Associates, New York, are engineers on the job.

Asbestos Mill and Townsite—Foundation Company of Ontario, Ltd., Toronto, Ont., has been awarded contract by the Canadian Johns-Manville Co., Ltd., to design and construct mill buildings, townsite and services in Munroe Township, near Matheson, Ont. The cost will exceed $3,000,000.

Farragut Houses—J. A. Johnson & Sons Inc., Brooklyn, N. Y., has been awarded contract for Farragut Homes in Brooklyn by the New York City Housing Authority at $5,126,000.

Hospital—City of Houston, Tex., plans to construct 750-bed charity hospital and out-patient clinic at estimated $7,500,000.

Housing—St. Louis, Mo., Housing Authority is planning to build twelve 6- to 13-story buildings for 1,000 families at an estimated cost of $5,600,000 to $7,000,000. George F. Hellmuth, Jr., St. Louis, is the architect.

Diesel Locomotive Plant—General Motors Corp., Oskawan, Ont., plans constructing plant to manufacture diesel locomotives at London, Ont. Estimated cost is $5,000,000.

Hospital—Alaska Native Service, Juneau, has awarded contract for $4,612,354 hospital in Anchorage, Alaska, to J. C. Boespflug Construction Co., Peter Kiewit Sons Co. and Morrison-Knudsen Co. of Seattle, Wash.

Apartments—John J. Mack & Associates, Chicago, Ill., will construct three 13-story apartments in Chicago at an estimated cost of $4,500,000.

Pipeline—Shell Pipe Line Corp., Tulsa, Okla., plans to construct a 160-mile, 10-inch crude oil pipeline from Elk City to Cushing, Okla., for $4,000,000.

Coal Treatment Plant—Hanna Coal Co., St. Clairsville, O., will award contracts after Sept. 1 for coal treatment plant at Georgetown, O. The estimated cost is $3,500,000. Allen & Garcia, Chicago, Ill., are consulting engineers.

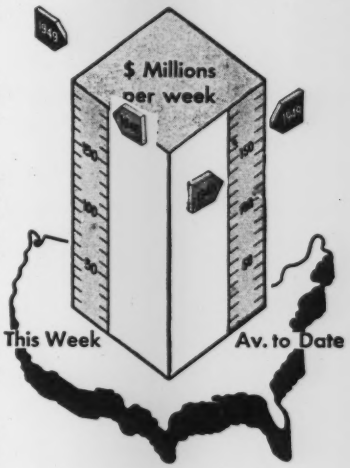
Sports Arena—Del E. Webb Construction Co. was awarded contract by Los Angeles Sports Arena Inc., to construct 15,000-seat indoor arena for approximately $3,500,000 in Los Angeles, Calif. Stiles Clements, Los Angeles, is architect.

Disposal Plant and Sewage System—City of Clarksburg, W. Va., plans to build disposal plant, outfall sewers, and to enlarge and extend present sanitary sewer system for $3,000,000. Chester Engineers, Pittsburgh, are consulting engineers.

COSTS AND VOLUME

ENR INDEX NUMBERS

Index Base = 100		1913	1926
Construction Cost	Aug. '49	478.28	229.91
Building Cost	Aug. '49	350.72	189.59
Volume	July '49	280	123



Activity This Week

As reported to ENR (in millions of dollars)

Amount of Contracts let

Week of Aug. 11 1949	This Week	Cumulative 1949 (32 wks.)	Cumulative 1948 (33 wks.)	% chge av.wk.
Federal	$14.9	$702.8	$662.6	+9
State & Mun.	103.7	2,000.1	1,616.4	+28
Total Public	$118.6	$2,702.9	$2,279.0	+22
Total Private	138.7	2,373.0	2,119.5	+15
U. S. Total	$257.3	$5,075.9	$4,398.5	+19

Contracts by type of work

	This Week	Cumulative 1949 (32 wks.)	Cumulative 1948 (33 wks.)	% chge av.wk.
Waterworks	$1.1	$142.6	$125.8	+17
Sewerage	14.9	163.6	138.4	+22
Bridges	7.1	202.0	186.8	+12
Highways	28.8	578.7	666.3	−10
Earthwork, Waterways	3.6	376.0	337.6	+15
Buildings, Public	59.5	1,036.3	683.3	+56
Industrial	54.0	668.0	625.6	+10
Commercial	68.3	1,444.4	1,222.5	+22
Unclassified	20.0	464.3	412.3	+16

NOTE: Minimum size projects included are: Waterworks and waterway projects, $28,000; other public works, $50,000; industrial buildings, $68,000; other buildings, $250,000.

New capital for construction

	Cumulative 1949 (32 wks.)	Cumulative 1948 (33 wks.)	% chge av.wk.
NON-FEDERAL	$3,391.1	$3,092.2	+13
Corporate Securities	1,594.6	1,429.7	+15
State and Municipal	1,796.5	1,235.2	+50
Federal-Aid Highway	*	427.3	....
FEDERAL	*	1,558.9	....
Total Capital	$3,391.1	$4,651.1	−25

*No federal approp. in 1949 to date.

GANTRY CRANES operating on a wooden trestle place lock concrete for McNary Lock and Dam on the Columbia River.

Step-Two Bids Received on McNary Dam as Step-One Concrete Work Proceeds

A $15,835,539 CONTRACT was awarded last week to McNary Dam Contractors, who were low bidders July 19 (ENR July 28, p. 28) for step-two construction of McNary Lock and Dam. Step two of the $227 million Columbia River power and navigation project (ENR Sept. 30, 1948, p. 56) will include the Oregon shore cofferdam and what has been termed the "toughest river diversion in U. S. construction history" as well as initial work on the powerhouse.

Meanwhile work is progressing on the $21,649,000 step-one contract, held by the same contractor. Major emphasis is on concrete work in the lock structure and 13½ sections of the overflow spillway.

Step two is a cofferdam job

The step-two contract, to be completed not later than May 1, 1951, is essentially a cofferdam and diversion job. However, to expedite the delivery of power in the Pacific Northwest area—now suffering a power shortage—some work on the power plant is included. This involves construction this fall of a "junior" cofferdam that encloses the site of the powerhouse service and assembly bays as well as the site for the first two main generating units. Thus, as soon as the junior cofferdam is completed (probably late this year) work can begin on the powerhouse.

The junior cofferdam can be justified on a dollar-and-cent basis because it will permit placing the first generating unit in service almost a whole year earlier than expected. Original estimates were that power from McNary would be on the line late in 1954. With the present schedule, the first unit should be generating by Dec. 1, 1953. The power revenues expected during this period are sufficient to justify the additional expense.

Concurrently, work will be going on on the Oregon shore cofferdam proper. This main cofferdam will include 87 steel sheetpile cells, varying from seventeen cells 28.65 ft. in diameter to two 66.84-ft. dia. cells. The junior cofferdam includes 24 sheetpile cells.

The main cofferdam includes a 240-ft. closure section that will be filled with 8-ton pre-cast concrete blocks, rock and earth, and topped by a 32-ft. wood crib. The deepest part of the river is involved in the closure section—bottom is 70 ft. below river surface level at diversion. This depth makes the use of sheetpile cells impractical if not impossible. Previous river diversions involving high flow have been in shallower depths and some form of sheetpile cofferdam has been used.

High flow—deep channel—tough diversion

Thus, the high flow in the river, together with the deep channel, combine to make the McNary diversion the toughest in U.S. construction history. The river, with an average flow of 191,000 cfs., must be raised from El. 255 to El. 270 and the

WASHINGTON SHORE cofferdam encloses step-one work. Oregon shore cofferdam will extend to the right.

240-ft. wide channel with bottom depth at El. 200 must be closed. Rock will be dumped in the gap and the river level gradually raised to run over the spillway sections built under the step-one contract.

Closure of the 240-ft. channel promises to be a dramatic event. The schedule calls for many of the cofferdam cells to be placed during the next 12 months. Then in August or September, 1950, work on the closure will start with completion to be by Dec. 31, 1950. Engineers of the Walla Walla District, Corps of Engineers, anticipate quite a New Year's Eve celebration if that schedule is met.

Although the contractor will be able to recommend substitution of an alternate diversion scheme, here is the Corps of Engineers' basic plan on which bids were based: Tetrahedrons (four-sided triangular pyramids) weighing 8 tons will be cast of concrete—this shape was selected as it is the solid most resistant to overturning. These tetrahedrons will be placed in the channel on what will amount to the downstream toe of an earth-and-rock fill. An underwater dike some 30 ft. high (up to El. 230) will first be cast by use of these huge monoliths. This will be back-filled on the upstream side with other heavy stone fill. Additional toe material will be cast into the river in successive 10-ft. increments and followed by upstream stone fill until the 270-ft. diversion mark is reached. After the river is diverted, more stone will be placed on the upstream side and eventually an impervious blanket will be cast. The cofferdam will be topped by a 32-ft. high wooden crib filled with impervious material on the upstream side and bank run gravel or rock fill on the downstream side. Thus the top of the crib will be at 302 ft., some 12 ft. above the top of the sheetpile cofferdam. The additional height is necessary to protect construction work during flood periods.

Water will first begin to spill through 12 of the 13½ bays constructed under step-one contract at El. 250.

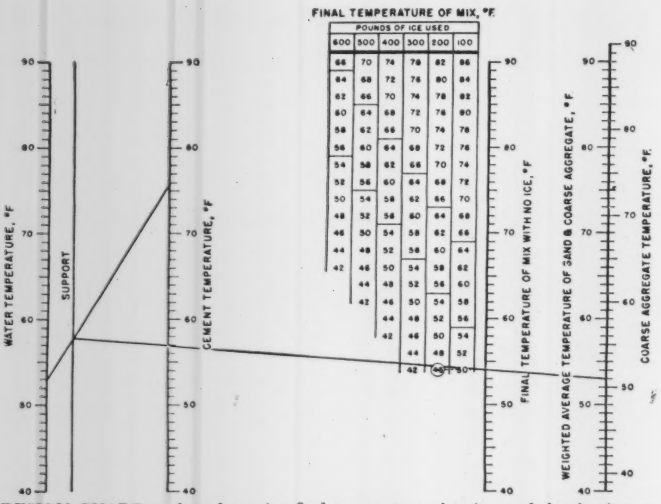
Cool concrete required

A major problem in the concrete work under the step-one contract was meeting the specification that maximum temperature of the concrete when placed be less than 55 deg. F. This is in accord with recent practice—particularly with the Corps of Engineers—in placing concrete. For example, on Davis Dam (a Bureau of Reclamation project) more than 600 lb. of ice was added in many 4-yd. mixes to keep the placing temperature below 80 deg. F. At Davis a terrifically high desert temperature had to be met (averaging well over 100 deg. F. in the daytime in the summer). At Bull Shoals Dam, a Corps of Engineers project, maximum temperature requirement is 65 deg. F. Here, the sand used in the concrete is refrigerated to help meet this requirement.

The ultimate in low maximum temperature will probably be reached on the construction of Detroit Dam (a Corps of Engineers flood control project in the Willamette Basin system) where a maximum of 50 deg. F. is specified. Plans for meeting this requirement at Detroit have not yet been worked out, since concrete will probably not be placed until the 1950 construction season. However, average air temperature at Detroit is relatively low even in the summertime so the cooling problem may not be as great.

At McNary Dam the 55-deg. F. maximum has been met so far by adding ice to the mix. As much as 600 lb. of 688-lb. water required for a 4-cu.yd. batch has been added as ice. Engineers at McNary have developed a convenient nomograph for computing the amount of ice required and this is reproduced herewith.

The example shown on the di-


FINAL TEMPERATURE OF MIX, °F
POUNDS OF ICE USED
600 500 400 300 200 100
WATER TEMPERATURE, °F
SUPPORT
CEMENT TEMPERATURE, °F
FINAL TEMPERATURE OF MIX WITH NO ICE, °F
WEIGHTED AVERAGE TEMPERATURE OF SAND & COARSE AGGREGATE, °F
COARSE AGGREGATE TEMPERATURE, °F

DESIGN CHART used to determine final temperature of a 4 cu. yd. batch of mass concrete, with 6-in max. size aggregate, using 15,288-lb. aggregate (including sand), 902.4-lb. cement and 688-lb. water.

agram indicates that water temperature is 53 deg. F. and cement temperature is 76 deg. F. A straight line drawn between these two scales intersects the support line. Using this intersect point and a point on the scale far to the left, the final temperature of the mix with no ice is found to be 54 deg. F. Although this is below the 55-deg. F. maximum, it has been found necessary to produce the concrete at a temperature of about 10 deg. F. below maximum. So by tracing over on a horizontal line it is found that in this case if 100 lb. of ice is used the resulting temperature would be 50 deg. F. Better yet, if 200 lb. is used the resulting temperature will be 46 deg. F.

The right-hand scale is intended to indicate the weighted average temperature of sand and coarse aggregate. However, it has been found that at McNary the coarse aggregate is in general 2 deg. F. cooler than the mixed aggregate. Accordingly, the temperature of coarse aggregate is usually used with this chart.

The ice at McNary is manufactured by automatic machines with capacity as much as 200 tons a day, batched separately as an aggregate.

When large amounts of ice are used, additional mixing time is required. Normal mixing time for a 4-cu. yd. batch is 2½ min. With 400 lb. of ice added, mixing time is extended to 2¾ min. and with 500 lb. or more of ice to 3 min. This is necessary to completely melt the ice and get uniform mix temperatures.

Purpose of the low maximum temperature requirement is to regulate expansion and subsequent shrinking of the concrete after it is in place. At McNary, no embedded cooling pipes are used. With the maximum temperature at 55 deg. F., a rise of about 20 deg. F. is anticipated due to the heat of hydration of the concrete. This, however, is not believed to be sufficient to result in significant shrinkage cracks. In fact, no contraction joint grouting between the monoliths is planned.

A vinsol-resin-type air-entraining admixture is used in the concrete to maintain workability. In the concrete mix, an attempt is made to use as little cement as possible. This results in a decreased amount of water (to maintain low water-cement ratio and, thus, high strength). Reason for low cement content is to lessen the effect of heat of hydration of the cement. This is even more important than the economy that results. So, with very little water used, an air-entraining admixture for workability is almost a necessity.

Table I—McNary Dam Concrete
Typical Concrete Batch Data

Water-cement ratio	0.74
Available air (%)	4.5
Mix	1:4.3:12.6
Cement content (bbl./cu.yd.)	0.6
Slump (in.)	1

Quantities for 4-Cu.Yd. Batch

Material	Amount
Cement (lb.)	902.4
Air-entraining agent (oz.)	10
Sand (lb.)	3920
#4 sieve-¾" (lb.)	2500
¾"–1½" (lb.)	2728
1½"–3" (lb.)	3752
3"–6" (lb.)	2388
Water	688

Table II—McNary Dam Concrete
Sand Limitations

Retained On (sieve size)	Min. Max. (% by wt.)
#4	0 5
#8	5 15
#16	10 20
#30	20 30
#50	20 30
#100	10 20
pan	6 10

Developing sand is a problem

The 4-cu. yd. batches at McNary require only 0.6 bbl. of cement per cu. yd. for mass concrete. With this low cement requirement it is important to have proper sand gradation. Some difficulty has been encountered at McNary because the locally available sand does not have sufficient coarse particles.

The aggregate contractor has done two things to develop proper gradation in the sand: Installed a crushing plant and used ¾-in. aggregate —of which there is a surplus—as raw material to make sand. He also has imported blending sand from pits 15 miles away.

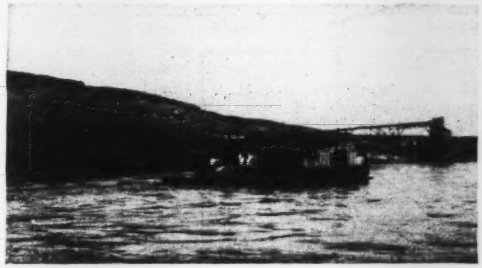
Another difficulty involved in the concrete mixing at McNary is in connection with the cement. The particular cement used has a tendency to flash set. When this difficulty is encountered or anticipated, the mix is allowed to stay in the mixer for one minute after being mixed. Then the batch is remixed for an additional 30 sec.

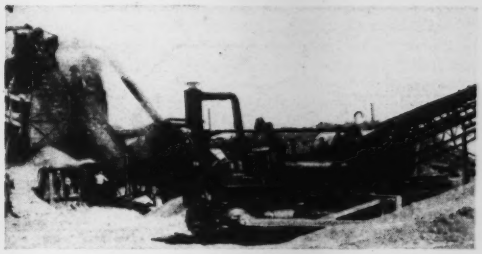
Cement is imported from a California mill by ship as far as Portland. From Portland to McNary it comes by 4,000-bbl. barges. Currently some 2,200 bbl. of cement a day is required and later the concrete production will increase to where 3,000 bbl. a day will be required.

Aggregates are produced under a separate contract from a natural river bed deposit a few miles upstream. They are trucked to the dam and stockpiled in open piles. Running under these piles is a tunnel with a conveyor system that takes the aggregate to the concrete batching plant.

The concrete in the spillway section is mostly 6-in. maximum aggregate size. In the lock structure most of the concrete is of a structural type with 3-in. maximum size aggregate.

The concrete plant is entirely automatic and includes four 4-cu. yd. mixers. For most work, the mixers discharge into buckets carried three at a time on a flatcar (with space for a fourth—the empty at the gantry crane). Some 2-cu. yd. buckets are used for smaller structural size work.





SAND is ferried across the Columbia for use in obtaining proper blend. Other sand is made in the crushing plant at right.

Mixing water for the concrete is pumped from the river into two 25,000-gal. tanks. It flows by gravity from there to the mixing plant. An artesian well has been located with a relatively pure supply of water; this water is used in the ice plant.

The mass concrete attains a compressive strength of about 1,500 psi. in 28 days. The Corps of Engineers field laboratory maintains control of the concrete work as its basic function. Ten-inch cores are diamond drilled from the concrete in place for laboratory test purposes.

Trestle down lock center

A large amount of concrete work is involved in the construction of the navigation lock. This lock will have the world's highest lift (92 ft. maximum) and is 675x86 ft. in plan. Concrete is placed in the lock walls by large gantry cranes operating on a wooden trestle running down the lock center line. Except for the lock filling and emptying flumes, no concrete is required on the lock bottom. A natural, hard-rock base is available.

Three tracks run down this wooden trestle and at the upstream end of the lock structure two tracks take a right-angle turn. These are used to carry concrete for placing in the monoliths of the overflow portion of the dam. Here again a large gantry crane is used to place concrete. This gantry operates on a fill placed just upstream of the overflow spillway.

For miscellaneous concrete work inside the cofferdam structure, such as the energy dissipators in the spillway of the dam, a different system is used. Concrete is carried by a rail car to a short spur track where the concrete is dumped through the trestle into a hopper. Trucks carrying 2-cu. yd. buckets are loaded from this hopper and a crawler crane makes final placement. However, more than 80 percent of the concrete will be placed from gantry cranes.

Although their contract does not call for completion before September of 1950, McNary Dam Contractors who hold the step-one contract hope to be finished with major concrete work by January, 1950. This will take some doing as they are slightly behind their own schedule now (but still ahead of the Corps of Engineers schedule). Severe winter weather last December and January prevented the pouring of any significant amount of concrete in those months.

The walls of the lock structure are founded in relatively narrow trenches. At the top of these trenches there is a transition section where the walls thicken out. To eliminate the possibility of a shrinkage crack at this point, the specifications required a 60-day wait between the pouring of the concrete in the trench and continuation of the wall. Had the contractor been able to pour the concrete in the trench in December as he planned, the other work would have progressed more swiftly.

This project is under the jurisdiction of the North Pacific Division of the Corps of Engineers. Col. O. E. Walsh, Portland district engineer during the latter part of McNary design, has recently replaced Col. T. D Weaver as division engineer.

As of Oct. 1, 1948, the McNary work was transferred from the Portland District to the newly formed Walla Walla District with Col. Wm. Whipple district engineer. Lieut.-Col. W. J. Ellison is resident engineer and he is assisted by Wm. B Watson as chief of the construction branch.

Step-one contract is held by McNary Dam Contractors, a joint venture including the Guy F. Atkinson Co., Ostrander Construction Co., and J. A. Jones Construction Co. A. E. Holt is general manager, R. J. Jenks is project manager, John J. Morton is assistant project manager and A. G. Chaussee is head engineer.

Set Fees for Property Surveys

After two years of study by a special committee, the American Congress on Surveying and Mapping recently approved a "Statement of Principles and Recommendations" on equitable fees for property surveys.

The statement follows a previous report, issued in 1946, on technical standards for property surveys. S. A. Bauer, of Cleveland, chairman of the Property Surveys Division, said that the latest statement must be used as a basis for determining appropriate and equitable fees for good surveys. The study is due to be submitted to the ninth annual meeting of the Congress June 8-10 of this year.

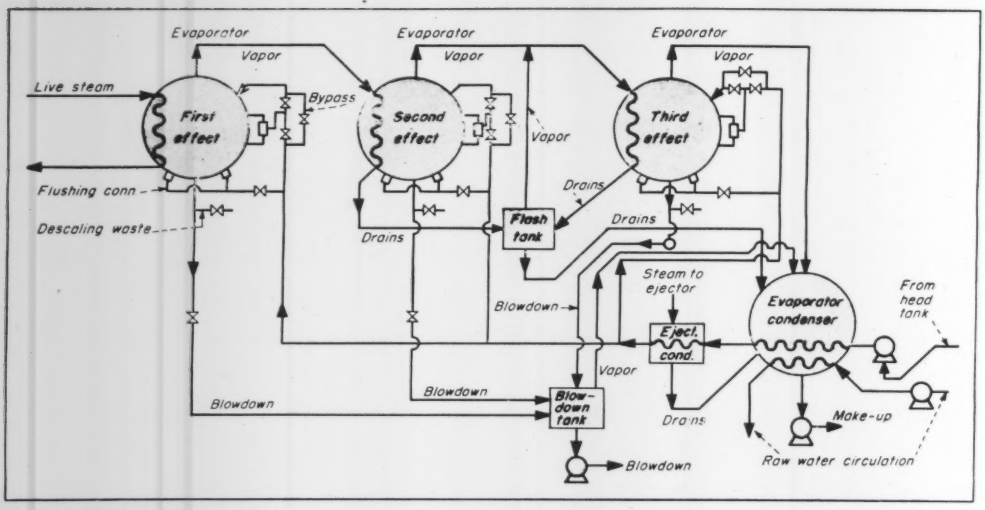
The recommendations for use and preparation of fee schedules provides:

Fees should be based on a proper professional service, rendered in conformity with the Technical Standards for Property Surveys of the American Congress on Surveying and Mapping, and any revisions thereto.

Fees should include compensation for such additional work beyond that of the client's immediate needs.

Fees should be predicated upon a proper base of compensation to properly trained employees.

A satisfactory and proper minimum basis for professional charges is represented in the formula "Salary Cost Plus 100 Percent" in which the term "salary cost" shall be understood to be the total of all wages and salaries paid to field men and office men whose work is directly connected with completion of the project, and further provided that "plus 100 percent" as used shall include all other normal items of expense in connection with the immediate project.



TRIPLE-EFFECT EVAPORATORS, using steam from the oil-fired main boiler plant, produce drinking supplies from sea water.

Drinking Water from Sea Water

(McGraw-Hill World News)

THE WORLD'S LARGEST seawater evaporation plant is now being built at Fahaheel, Kuwait (on the Persian Gulf) by the Kuwait Oil Co. This 720,000-gpd. installation will provide a more economical and reliable drinking-water supply than that now obtained by tanker from Shatt al Arab, 90 miles away.

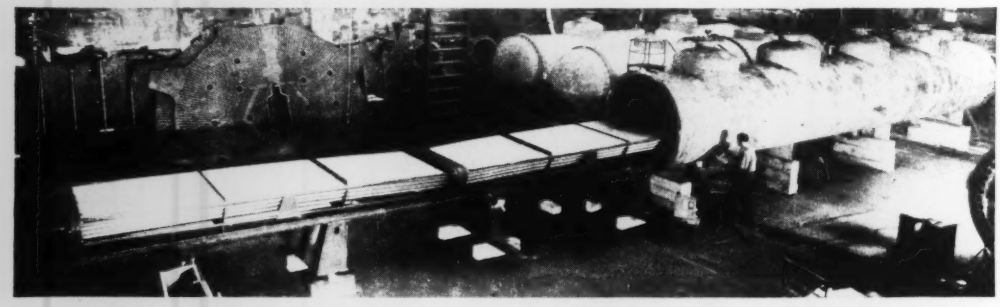
The plant will consist of six triple-effect evaporators, each with a daily output of 100,000 gal. of distilled water. The equipment is designed to produce water that will meet approved potability and purity standards and be acceptable for domestic, agricultural and industrial consumption.

Steam for each first effect (Fig. 1) is supplied from the main boiler plant. It enters evaporators as de-superheated steam at 5 psi., and is returned to the boiler as water at 227 deg. F.

Heat required for evaporation in each second effect is provided by vapor from the first effect, while that required for evaporation in each third effect is provided by vapor from second effects.

Steam from second and third effects is collected in a flash tank; vapor from the flash tank is led back into the system for use as heating vapor for the third effect. Condensate in the flash tank is drained to the main condenser.

Incoming sea-water feed is first preheated in the main condenser and then used as circulating water in the ejector condenser before being passed into each of the effects as feed water. Half of the feed to each effect is vaporized, while the other half is "blown down" to waste after having been collected in a flash tank. The vapor from the flash tank is led directly into the main condenser.



EACH EVAPORATOR EFFECT consists of 72-in. diameter shells with two tube bundles.

Vapor from the third effect, the blow-down flash tank, flash-tank drains and ejector condenser, is collected in the main condenser and pumped to surge tanks. In these tanks, it is mineralized by mixing with a pre-determined amount of brackish water before being pumped to the main storage.

To ensure the purity of the distillate, each effect is provided with a centrifugal steam-and-water separator. In addition, a multi-point conductivity indicator indicates quality of the distillate. This indicator is also connected to ejector drains and drains from second and third effect evaporators so that a leaky tube or the carry-off from any effect can be readily traced.

Details of the evaporators

Each first and second effect evaporator has a circular copper-bearing steel shell, ½-in. thick, 72 in. inside diameter and 29.5 ft. long. Each third effect evaporator is similar in shape and diameter but is 38.5 ft. long.

All effects are fitted with double tube-bundles. The heating surface in each of the first and second effects is 2,150 sq. ft., and 2,220 sq. ft. in each third effect.

The main condenser has a copper-bearing steel shell of 5.08 ft. dia. and 21.5 ft. over-all length with cast-iron water boxes. The tubes (Fig. 2), which are of cupro-nickel, have an active tube length of 18 ft. giving a total cooling surface of 1,600 sq. ft.

The air-ejector unit consists of a double-pass condenser fitted with two single-stage ejectors connected to the main condenser. The cooling medium for this condenser, is the sea-water feed to each evaporator.

Design performance data, estimated on 50 percent dirty conditions, requires 17,700 lb. of steam per hour at a temperature of 227 deg. F. to evaporate 15,810 lb. of sea water per hour in each of the first effect evaporators. With an equal amount of blow-down at a temperature of 199 deg., the heat transfer is estimated to be 17,190,000 Btu. per hour.

For second-effect evaporators, 15,810 lb. of vapor at a temperature of 197 deg. F. from the first effect evaporators are required to evaporate 14,400 lb. of sea water per hour. With an equal amount of blow-down at a temperature of 187 deg., the heat transfer is estimated at 15,500,000 Btu. per hour.

For third-effect evaporators, 14,910 lb. of vapor at a temperature of 165 deg. F. from both the second effect evaporators and flash tank, evaporate 14,580 lb. of sea water per hour with 15,290 lb. per hour blow-down. The total quantity then passing to the condenser is 45,985 lb. per hour. This includes vapors from the third-effect evaporator, blow-down flash tank drains from the flash tank and the ejector condenser.

Thus for 17,700 lb. of heating steam, plus 485 lb. of steam required by the ejector, 45,985 lb. of distillate are obtained, which is equivalent to 2.53 lb. of distillate per lb. of steam.

The sea-water treatment plant was designed by Ewbank and Partners, consulting engineers, London. The units were manufactured by the Westinghouse Electric Corp., NYC.

PHS Sanitary Inventory Exceeds 900 Circulation

More than 900 copies of the recently-published inventory of Water and Sewage Facilities in the United States have been distributed to state health departments and other public and private organizations interested in environmental sanitation. Assistant Surgeon General Mark D. Hollis, chief of engineering activities, Public Health Service, reported the progress of distribution recently.

A comprehensive listing of communities and their sanitary facilities—never before available in this country—is contained in the printed inventory. Before its publication, no information was available on communities without facilities. The new publication lists all incorporated places of over 100 population and all unincorporated communities of over 500 population. It is a source book of current information on basic needs in the sanitation field.

The inventory was prepared by the staff of the Public Health Service Environmental Health Center (formerly the Water and Sanitation Investigations Station) at Cincinnati, Ohio, in cooperation with the sanitary engineering divisions of the states. It includes details on sources of water, type of water treatment plant, methods of treating sewage (or lack of such treatment), and sewerage facilities for each community listed.

Copies of the inventory may be obtained on request from the Environmental Health Center, U. S. Public Health Service, 1016 Broadway, Cincinnati 2, Ohio.

One Indiana City to Install Garbage Grinders

Only one of 46 Indiana cities reporting contemplates taking action—under a recent state law enabling municipalities to issue revenue bonds—to install garbage grinders in private homes and business places.

Sixty-eight percent of the state's 67 cities of 5,000 population or over replied to the query, "do you anticipate taking advantage of the provisions of the law allowing cities to purchase grinders?" Only Jasper, the city sponsoring the law before the state legislature, replied in the affirmative.

Any Indiana city owning or constructing a sewage treatment plant is allowed to issue bonds to purchase, install and maintain electric grinders under the law. Grinding units will be paid for from rental fee collections. No funds from the revenue bonds may be used for treatment plants or sewers to carry increased loads.

Existing sewage treatment facilities were judged inadequate to handle present loads by 22 of the reporting cities. Twenty-six of the cities reported that major changes would be required in their sewage systems to handle the additional waste if grinders were placed in the majority of the homes.

Indiana's two largest cities, Indianapolis and Fort Wayne, reported adequate sewage systems for present loads.

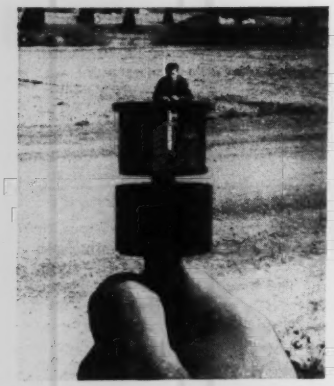
How Much Concrete To Stop Gamma Rays?

Thickness requirements for concrete as a protective barrier against gamma rays from radium are given by Harold O. Wyckoff and Robert J. Kennedy in Research Paper RP1983, Journal of Research of the National Bureau of Standards, Vol. 42, May, 1949.

The authors' recommendations are for broad-beam irradiation of 147-lb. per cu. ft. concrete, assuming a permissible dosage rate for personnel of 0.3 roentgen per 48-hr. workweek and that personnel may be as near as 7.5 in. to the outside of the barrier. If personnel do not come closer than 3 ft., 1 in. may be deducted from the concrete and 4 mm. from the lead requirements in the table.

Barrier Thickness for Radium

Source Strength (millicuries)	Source to Personnel Distance 1m. Lead mm.	1m. Concrete in.	2m. Lead mm.	2m. Concrete in.	3m. Lead mm.	3m. Concrete in.
1,000		20.3		14.7		11.4
500		17.5		11.9	34.5	8.7
200		14.8	33.3	8.3	17.5	5.0
100		11.0	20.7	5.5	5.8	2.0
50	32.7	8.2	7.7	2.5	0	0
20	15.8	4.5	0	0	0	0
10	4.3	1.5	0	0	0	0



PERPENDICULAR OFFSET established with pentagonal prism. With prism on baseline, observer sights a line stake (lower image), signals offset stake to coincide.

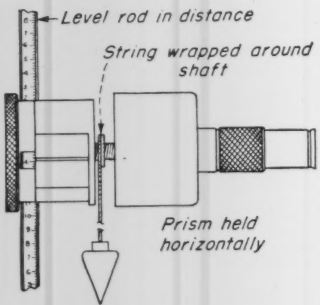
PRISM POSITION obtained with plumb bob suspended from handle. Here a concrete form is checked for possible displacement after pouring.

A Surveying Instrument For Your Watch Chain

Thomas E. Riley
Registered Surveyor
Portland, Oregon

PENTAGONAL PRISMS, or optical squares, have been receiving deserved attention for their ability to replace transits on many surveying jobs. Less known is their value to engineers, contractors, and other supervisory personnel for checking survey operations and the layout of construction projects.

They are inexpensive, costing from $19 to $26. About the size of a ten-ounce plumb bob and the weight of a jackknife, they can be kept on the person, ready for use whenever needed. A permanently-attached case encloses most types completely; it unscrews to cinch a plumb-bob string in place and to serve as a handle.



HAND LEVEL SETUP. Prism shows horizontal image of string. Observer reads rod in window opposite image.

These "watch pocket transits" are of two major types: The single-prism, which turns 90 degree angles; and the double-prism, which turns both 90 and 180 degree angles. The latter thus is able to be aligned quickly between two points. Pentagonal prisms have the unique property of throwing a precise right angle, even when the prisms are not held rigidly nor in exact alignment with the eye—therefore no tripod is necessary with their use. Either of the two types will produce results accurate to one minute of a degree.

In ordinary surveying they can replace transits on many jobs, especially land surveys and construction projects. A two-man crew, (instrument man and one chainman) in most cases, will progress faster than a four-man transit crew. Measurements are taken at right angles to each other, so that area and location plotting of even the most peculiar-shaped objects can be done in the office with simple trigonometric formulas. It follows that rectangular coordinates may be computed readily. Other advantages include an almost complete lack of wear on the instrument, and immunity to weather conditions. Rain, heat, and freezing weather have no effect on the "watch pocket transit" method of surveying.

A handy tool for checking

For supervisory personnel the optical squares give even more advantages. Their compactness and speed of use make them practical tools for spot checking. Needing little or no practice to operate and yielding data for simple right-angle calculations, they allow a supervisor to be his own surveyor insofar as field checks are concerned. The accuracy of a survey line can be tested quickly. Errors found by the office can be traced down rapidly without recalling the survey crew. In construction layout where transit closures are a nebulous check, the prisms allow supervisory personnel to check accurately on the positioning, the forms and the erection of buildings without interfering in any way with the progress of the work.

It should also be pointed out that some makes of these pentagonal prisms also can be used for rough hand-leveling, thus giving supervisory personnel an instrument for both horizontal and vertical checks. The prism is turned sideways and a plumb-bob string is attached as shown in the sketch. Levels are run by viewing a level rod through the small coincidence window, reading the rod opposite the horizontal image (given by the prism) of the vertical plumb-bob string. The method of attacking the plumb-bob and string makes the level somewhat awkward, but the level has advantages over ordinary hand levels for occasional use in that it does not have to be tested, cannot be out of adjustment. Leveling done in this manner has an accuracy of one inch in 200 feet.

Neighborhood Shops Preferred In Cleveland

Cleveland suburbanites prefer neighborhood shopping centers rather than better and quicker ways of getting downtown, according to the American Society of Planning Officials.

Results of a recent poll taken in Cleveland show that of the 622 persons questioned, 556 said they would prefer to do their shopping nearer their home. The poll will be used in connection with a downtown parking survey as a guide for the community's future transportation planning.

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NO WONDER THERE'S INCREASING DEMAND FOR

RUGGED BULL DOG V-BELTS

On tough jobs where a dependable V-Belt drive is of utmost importance, operators today are specifying Bull Dog V-Belts.

These new BWH "titans" have consistently proved they deliver the kind of steady, trouble-free service that speeds production and slashes maintenance costs.

Here's why there's less slippage with Bull Dog V-Belts, fewer shutdowns for adjustments, greater long-term economy in their use:

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4. *Wear-Resistant Covers* of heavy, bias-cut fabric, to protect heart of belt from dirt, grease and moisture.

Bull Dog V-Belts are one of many famous products manufactured by BWH. When you need industrial rubber goods, look to BWH for products of dependable ruggedness, to BWH distributors for dependable service.

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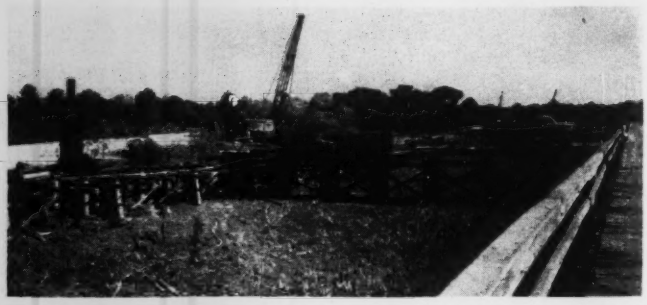


CONSTRUCTION RAMP from old trestle. A handy approach across marsh muck.

Coast Route to Cross Santee Rivers On Fireproof Bridges and Trestles

SOUTH CAROLINA is taking no more chances on having its coastal highway knocked out by fire. Twice in the past five years sections have been burned out of an old timber trestle that stretched across a marsh island for two miles between the North and South Santee Rivers, on U. S. 17 below Georgetown. The state highway department rushed sand fill into the gap each time, but for weeks coastwise traffic had to detour many miles inland.

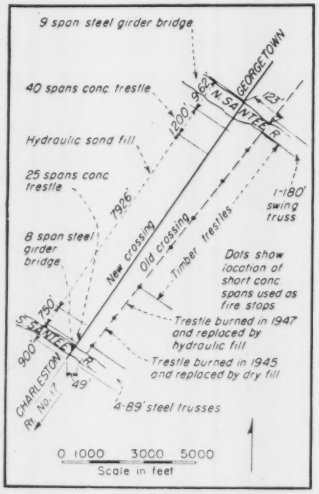
Now the state is building a whole new fireproof crossing alongside the old one. It consists of a steel bridge across each branch of the river, two concrete trestles and a mile and a half of sand fill. The North Santee bridge is 962 ft. long, of nine spans, with a navigable-channel span 32 ft. clear above msl. (during slack flow this stream is an estuary); the south bridge has eight spans totaling 900 ft. in length. Trestles, both of four-pile bents spaced at 30 ft., connect the bridges with the island fill; the north trestle is 1,200 ft. long and the south trestle is 750 ft. long. The fill is 12 ft. thick, placed hydraulically on top of 12 ft. of marsh mud.

Construction access

Access to the work is an important problem because much of the site is in marsh ground that will not support even a man. The solution is inherent in the location. The new center line is 123 ft. from that of the old bridge at the north end and 49 ft. from the old at the south. Contractors work directly from the old location at the south end. At the north they have three short timber ramps from the old trestle, thus enabling access to various work stages without interference with other stages (see first illustration). In addition, they work from the abutments.

Bridge work divides into two main sections, one for both steel bridges and one for both trestles. Trestles and bridge substructures are well under way. Bridge steel and bridge decks will be built under separate contracts.

Wannamaker & Wells, Orangeburg, S.C., have the trestle job, which comprises 65 four-pile bents that carry a concrete roadway, sidewalk and hand rail. Exterior piles are battered, and one pair of bents near the middle of each trestle is braced longitudinally to form a tower. All of this work is on soft marsh (an old rice field) at El. +2.5. Stable material varies from −10 to −22 at the north site and from −2 to −11 at the south. Average pile penetrations are to −34, except for about ten bents adjacent to the North Santee bridge, where the pile tips are at El. −40.



SANTEE CROSSINGS. New location (left) combines land fill, fireproof trestles and bridges.

Starting at the sand fill and working toward the river, construction at each site began with the placement of timber-pile falsework bents, upon whose caps the forms for concrete spans were to be carried. But first, the reinforced concrete piles were cast, on their sides, in wood forms erected on the falsework bents. After eleven days of curing (using an admixture for high early strength) the piles were jetted and driven by a single-acting steam hammer in leads hanging from a crawler crane that rode on the falsework. Caps were formed and poured, and steel beam-and-slab forms were erected for the span pour.

The plant for deck concreting was simple. Materials stockpiled on the fill, and later on the previously built deck, were wheelbarrowed to a 16-S mixer, which discharged into buggies for placement. Approved fresh water for concrete and jetting was taken from an open well dug at the site. Boiler feed water was pumped from a wellpoint. Curb, sidewalk and hand rail concrete were placed later in wood forms hung from cantilever brackets that were part of the first span construction.

As shown on the map, the south trestle was near enough to the old location so that access was no problem (especially because this was a burned-out section that had been filled). At the north trestle, timber ramps from the old structure gave Wannamaker & Wells' men access to the advance stages of work. Bent construction started from filled ground, reached by an earth ramp from the old bridge.

Pier construction

The middle illustration at right shows how McMeekin Construction Co. of Cherow, S.C., gets to its work on the North Santee River piers. A ramp leads down off the old bridge to a pile-supported platform alongside the shore pier. This platform joins another platform jutting out into the river to the pier shown with high forms still in place. (The jutting platform now has been extended to the pier where the crane barge is working.) Another platform leads from the far bank to the piers on that side of the navigation channel.

McMeekin's job covers substruc-

tures for both bridges. There are nine piers on the North Santee and eight on the South.

On the North, water depth goes down to 20 ft. at the channel. Eight piers bear on untreated piles and one bears on steel piles. In addition, the one abutment (the other end ties into trestle) bears on creosoted timber piles. Pier pile penetrations vary from −38 to −46, with bottoms of seal mostly at from −25 to −29.

Steel sheetpile cofferdams were driven around timber or steel wales. In deeper water, cofferdam wales were set with the help of temporary timber piles that acted as guides.

After piers were mucked out to design bottom of seal, timber foundation piles were driven with a drop-hammer, in leads hanging from a crawler crane. The crane was operated either on the staging or an old five-pontoon barge moored to temporary timber piles. Batter pile position was obtained by driving piles through templets supported by the cofferdam wales. A tremie concrete seal, generally 8 ft. thick, then was placed, and in seven days the cofferdam was unwatered for pier construction.

The access ramp and platforms were most useful for pier concreting. Two-batch trucks, loaded in McMeekins' yard on the mainland, charged a 27-E single-drum paver riding on the platform. The paver discharged into a bucket, which was hoisted to the forms by a crawler crane, also on the platform.

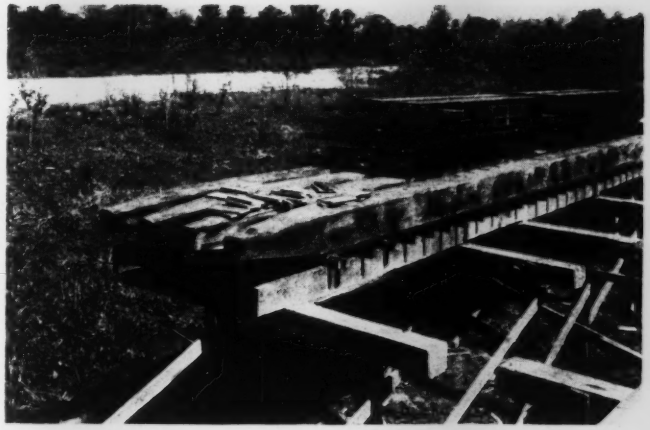
South Santee Bridge

A soft marl bottom with hard rock at widely varying depths indicated the use of steel foundation piles at some of the piers of the South Santee River site. The design called for three steel-pile foundations and for a single steel test pile at each of the other five pier locations. These tests revealed one more pier site that required the use of steel piles.

Construction procedure for the four steel-pile foundations was similar to that for the timber-pile foundations. Hard-rock foundations existed for the other four piers at −14 to −19. Cofferdam sheetpiling penetrated the overlying soft marl, to provide a seal for unwatering. Pavement breakers removed the soft marl.

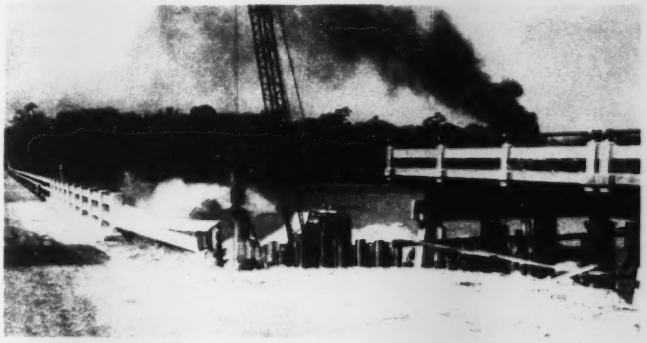
Management

The North and South Santee River project is being built by the South Carolina State Highway Department: C. A. McMillan, chief highway commissioner; S. N. Pearman, state highway engineer; W. J. Gooding Jr., bridge engineer; R. S. Hills, project engineer. Superintendents for Wannamaker & Wells, and for McMeekin are, respectively, S. S. Stokes and R. K. Higgins. J. W. Barnwell, Jr., Columbia, S. C., has the steel superstructure contract. Total cost of the three contracts is $1,001,735, ($116,005 for concrete deck on the steel bridges).

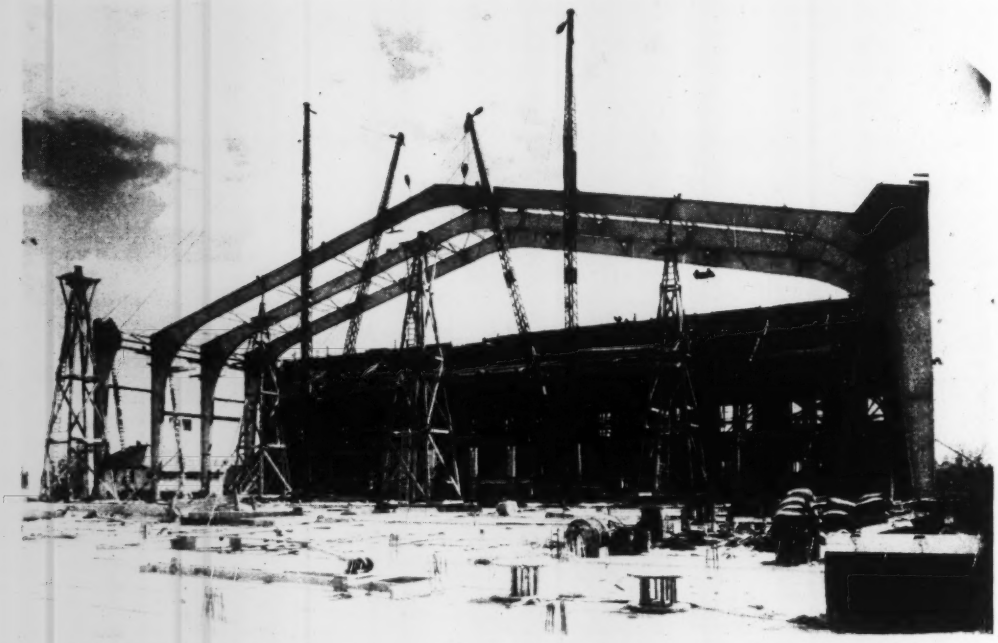


CONCRETE PILES were formed and poured right on the falsework. Stripped forms are stacked neatly on the piles.

NORTH SANTEE PIERS also served by ramp from old trestle. Platform projects into river, at left side of nearby pier.



PIER WORK BEGINS where finished trestle ends, at South Santee River. Steam hammer drives cofferdam sheetpiling. Concrete structure is fire-break.



(Fig. 1) LONG, HIGH RIGID FRAMES of near record size (222 x 84 ft.) span the new Oregon State College basketball pavilion.

Indoor Stadium Has 222-Ft. Rigid Frames

G. W. Holcomb
Professor of Structural Engineering
Oregon State College, Corvallis, Ore.

RIVETED-STEEL RIGID FRAMES of near-record size support the roof structure of a new basketball pavilion built for Oregon State College, Corvallis, Ore. The 222-ft. frames are long enough to accommodate a 106x170-ft. playing floor with the long dimension of the floor parallel to the rigid frames. Most of the 10,000 spectator seats can be built into the reinforced concrete ends of the building, allowing greater height for the balcony and retaining full spectator vision.

The twelve bents each include 58-ft. vertical legs with an 84-ft. rise at the center. Thus, these frames rank with the largest ever built—they probably are the record for postwar construction.

No design complications were introduced by the size of the frames. The long span and extra height introduced heavier moments—particularly at the haunch. Design was a matter of making the frames big enough to resist the forces acting.

The important factor in controlling the location of the splices was the maximum shipping size that was permissible. This resulted in a heavy splice detail at the haunch. It would, of course, have been more economical to place these haunch splices at some other point in the structure.

The depth of the girder on the roof slope is 54½ in. except for a short section at the haunch and a slight deepening at the ridge. The girder section is composed of a ½-in. web and 8x8x¾-in. flange angles with cover plates on the legs and slope extending some 36 ft. from the knee. The legs of the bents taper from 2½-ft. deep at the base to 13 ft. at the knee or haunch.

The bents are supported at the first floor level on 4½-in. dia. cold-rolled steel pins, with the base plates anchored to the reinforced concrete foundation. The horizontal thrust of the legs is carried by 2½-in. tie rods, each of which is fastened to its base plate by a clevis. The 220-ft.-long tie-rods were delivered in sections with upset ends and joined on the job by sleeve nuts. Turnbuckles were used for final adjustment. The rods lie in recesses in the first floor. These cavities were filled with concrete after the final rod adjustments were made.

Stairs to the basement were placed on the center line of one of the bents. It was necessary to offset the tie for this bent several feet horizontally. The offset was made on a 9-deg. angle with the tie. Anchors in the concrete structure at the offset carry the rod tension around the stair openings.

Frames shipped in seven pieces

The steel frames were made up of seven pieces, the weight of each frame totaling 60 tons. The maximum size of a component was dictated by transportation facilities and this also influenced erection procedure.

The legs of a frame were first set in position and held by cables and a wood post. Next, the haunch splice-plates

were bolted on. These were followed by the first section of the rafters. One end of these pieces was attached to the haunch and the other was placed on a 30-ton jack supported by a wood tower. The jack spotted these sections at exact elevation.

The second section of the rafter was fastened to the first by a splice plate and held by cantilever action during erection. As soon as both sides of the frame had reached this point, the short, ridge section was placed to complete the bent.

Two fixed derricks were used to erect the frames, three moves being required to complete the twelve bents. Heavy timber shoring was placed in the basement under the concrete main floor to support the derricks during erection. The bents were set one at a time and braced to the one previously erected. During erection the joints were 90 percent bolted at the haunch and 20 percent bolted at the ridge section splice-plates. These bolts were later replaced with rivets.

The building was roofed with 2-in. t. and g. sheathing, supported on 10-in. WF beams with 3-in. timber nailing strips. Conventional built-up roof covering was laid over the roof deck and the underside was accoustically treated.

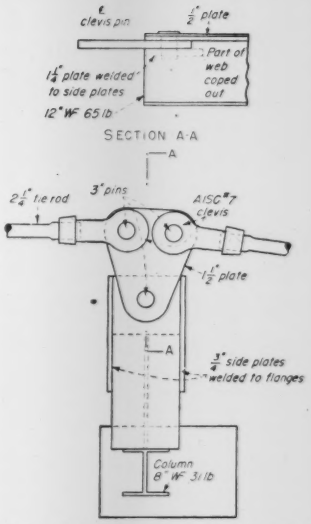
Reinforced concrete is used for the remainder of the building. The enclosed area of the first floor is 263x227 ft.—about 1.35 acres. In addition to the playing floor, it will house athletic facilities, concessions and student offices under the balcony seats. Besides basketball, the building will be used for concerts, plays and other student activities.

The second floor provides balcony access corridors, concession space and rest rooms. The second floor access corridor connects to the main access aisle of the balcony which extends entirely around the playing floor. There are rows of seats below the balcony access aisle that extend entirely around the playing floor. Twenty-two rows of balcony seats above the access aisle parallel each side of the playing floor.

The playing floor is recessed into reinforced concrete slab and girder construction. The floor surface is select quality 13/16-in. maple flooring laid on 2-in. planking supported by 4x4-in. sleepers on 2-ft. centers.

Wall columns extend the full height of the building at each steel frame. The columns are built free of the frame with a clearance of 2 in. allowed for deflection of the steel roof structure. Elastic computations indicate that with full live and dead loading, the deflection of the frame will be ¾-in. horizontally at each knee and 3½ in. vertically at the ridge.

A model on a one-quarter inch to a foot scale was built by the college civil engineering department to check these deflections. The model was made of brass, with flange angles, plates and stiffener angles soldered to the web, instead of using rivets. This model when loaded with a load determined by similitude, checked the horizontal deflection at the knees, and gave a 2⅞-in. deflection at the ridge.



(Fig. 2) OFFSET of several feet of one of the 2¼-in. dia. tie rods was achieved by using this detail.

General contractor is J. G. Watts Construction Co., Seattle, Wash.; structural steel fabrication and erection was by Bethlehem Pacific Coast Steel Co.

Jones and Marsh, Portland, Ore., were the architects, with structural engineering by Miles K. Cooper and Rowland S. Rose, Portland, Ore.

Urge Care With Rodent Poison 1080

SODIUM FLUORACETATE, the highly effective rodent poison generally known as compound 1080, must be handled with extreme caution, according to a warning recently issued by George L. Hall, chief engineer of the Maryland State Department of Health. "Accidental poisoning of human beings, dogs, cats and desirable forms of wild animal life can cause rapid death, for comparatively small doses are fatal and there is no known antidote," he said.

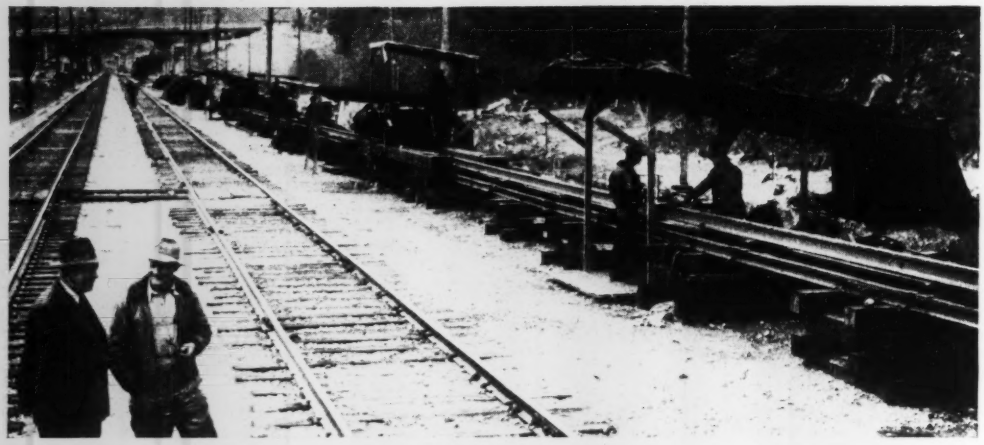
"Pest control firms using 1080 should instruct their employees to use the rodenticide with constant awareness of its hazardous quality. The compound should be stored in labeled containers and warningly colored with nigrosine black dye, for its natural appearance is similar to flour, powdered sugar and other innocuous substances. Prepared solutions of 1080 should be stored in a safely locked place when not in use and careful accounts should be kept of the amount on hand.

Worker protection required

"To protect themselves workers should wear respirators to prevent inhalation of dust when handling the dry chemical. Since the poison can be absorbed readily through cuts and abrasions, or even in some instances through unbroken skin, gloves should be worn during prolonged handling. Hands should be kept away from the mouth and washed thoroughly after handling to prevent accidental swallowing of small amounts of the poison.

"Accidental poisoning of other persons and animals can be prevented by precautions against the contamination of food or water, collection and burning of uneaten bait and avoiding any overflow or spilling of poisoned water. The complete burning or deep burial of poisoned rats or mice is necessary because even dried carcasses can cause secondary poisoning in cats and dogs. Operators should keep complete records of 1080 received and dispensed and of the location of bait and poisoned water. Owners of property or responsible employees should be informed concerning the use of 1080 on their premises and asked to sign a statement to the effect that they know of its use and are aware of the precautions that should be employed.

"The substance should be used only by qualified pest exterminators and should under no circumstances be made available to other persons. Its use is not recommended in private houses but should be limited to business, industrial and military establishments, ships and guarded city dumps. Already the improper use of 1080 has killed human beings and domestic or wild animals by types of accidents which will continue to occur unless the substance is used with meticulous care and awareness of its lethal quality."



Rail sections are welded in a track-side assembly line as . . .

Longest Tunnel Gets Continuous Rail

TO REDUCE MAINTENANCE COSTS in the longest railroad tunnel in the United States, the Great Northern Railway is installing continuous welded rail in its 7.79-mile Cascade Tunnel. The continuous welded rail will be less subject to corrosion and to damage from pounding at the joints than ordinary jointed rail. In tunnels, dampness speeds rust by working behind fittings of jointed rail, thus increasing maintenance costs.

Use of welded rail in tunnels is not new, but the Great Northern work marks a new advance in effective organization of the necessary operations.

The Great Northern is changing its rails from 110-lb.-per-yd. rail to 115-lb.-per-yd. and, in the course of this change, is installing the continuously welded rail in the eastern 4-mile portion of the tunnel (98 miles east of Seattle, Wash.). The welding assembly line has been set up just outside of the west portal and will also be used during the 1950 season when rail is installed in the eastern portion of the tunnel.

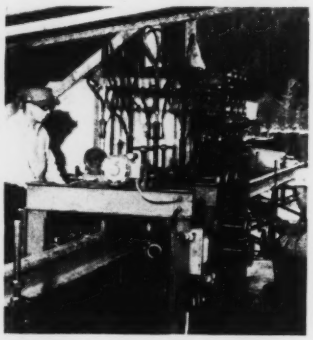
Pressure-welder

Key to the track-side continuous welding operation is a pressure-welding machine. Cleaned (with ethylene dichloride) and polished rail ends are trued and clamped together under a pressure of as much as 2,700 psi. Gas welding flames, jetting from 125 welding tips at a temperature of 6,000 deg. F., heat the joint to a temperature of 2,300 deg. F. After 5 min. of this intense heat and high pressure, the weld is completed.

The rails move on and as excess metal is burned off, two more rail ends are being fused in the pressure-welding machine. The weld is next heated to 1,550 deg. F. to relieve locked-in stresses. Then the weld is ground smooth, the rail is flame-cleaned, a preservative is applied, and, finally, the weld is magnaflux tested.

As the rail is moved along the assembly line it is snaked onto a series of flatcars by rollers and then clamped in position. Some 1,320 ft. can be carried at one time on a train of 25 cars that can go around 4-deg. curves with the rail taking the bend.

Each flatcar is equipped with rollers to handle twelve rails abreast. However, only three welded lengths have been moved at any one time on the Cascade Tunnel job because this work must be done between trains and time is not available to install more.



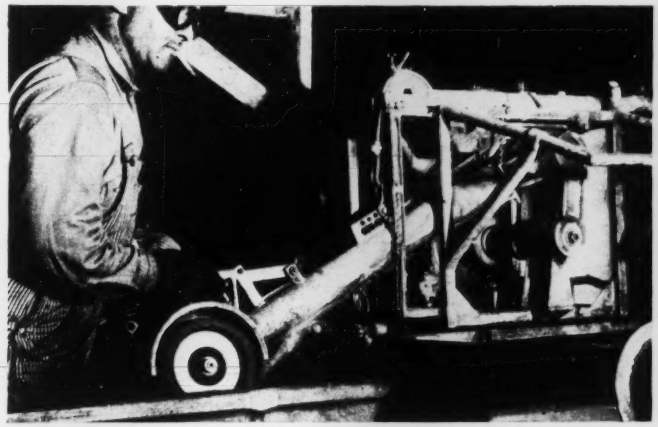
HEART of the operation is this pressure-welding machine that fuses the rails under intense heat and pressure.

Easily unloaded

To unload one of these quarter-mile lengths of continuous rail, a clamp is attached to the rail end and secured to the roadbed by means of a steel cable and rail shackle. Then the string of flatcars is slowly pulled out from beneath. Joints between the assembly line welded sections are later hand welded.

Equipment for this work was leased by Great Northern from the Oxweld Railroad Service Co. Total estimated cost of the rail-replacing job is $189,000.

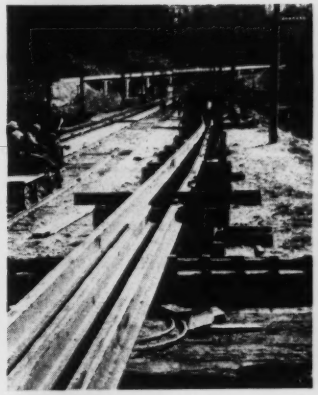
L. J. Gilmore is general roadmaster for Great Northern Railway in general supervision of the work. F. J. Duffie (left in photo above) is general supervisor for the Oxweld Railroad Service Co. and Harold Rich (right) is job welding foreman for Great Northern.



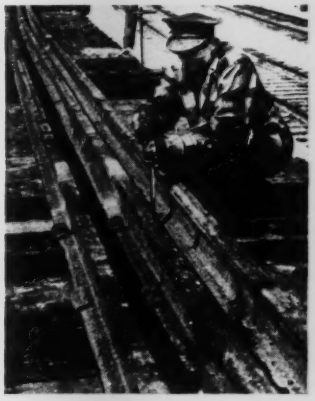
A welded rail is ground smooth, . . .

. . . flame cleaned . . .

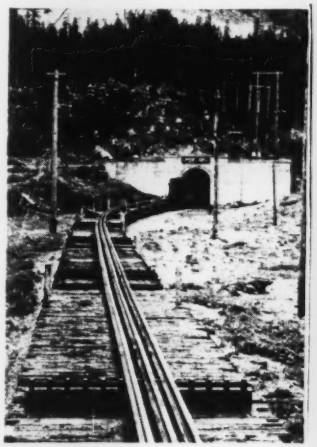
. . . magnaflux tested, . . .



. . . rolled on cars, . . .



. . . and bolted in place . . .



. . . to go in the tunnel . . .

. . . where it is pulled off as the cars move ahead.

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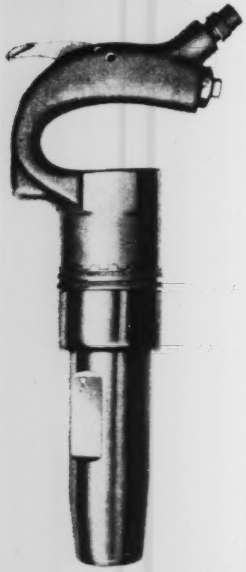

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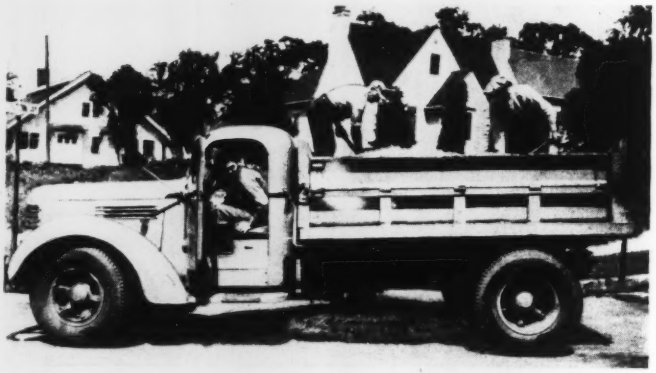

SAND IS SPREAD evenly on a newly oiled street by one of Minneapolis' four distributor trucks. City engineers foresee winter use too.

Revolving Spreader Installed on Dump Trucks

Permanent installation of a compact sand spreader on a dump truck does not hinder use of the truck for ordinary operation.

The spreader, which was developed by Otto Nitardy, equipment superintendent, city engineering department, Minneapolis, Minn. is a hollow steel cylinder set in a hole cut in the bottom of the dump body. The lower end of the cylinder contains a revolving disc driven by a power take-off and equipped with baffles to insure even spreading. Sand is fed by hand into the top of the cylinder. Telescopic suspension permits raising or lowering of the spreader mouth.

Costing less than $200, the spreader will be useful next winter in covering icy streets with sand and cinders.

ANTENNAE on tractor close hopper-gate control circuit operated from switch in cab.

Automatic Hopper-Loading Into Carrying Scraper

When antennae, mounted on the rear of this crawler tractor, contact electrodes attached to the hopper, they automatically close a control circuit for the hopper's gate. A light in the cab signals contact with the electrodes, whereupon the operator can open and close the hopper gate without leaving his tractor. Average loading time has been reduced to 10 to 12 seconds.

This is a coal-yard installation. After dumping in storage areas, the rigs spread coal in thin layers and compact it with their own weight. The installation is in operation at the Cincinnati Gas & Light Co. yards.

MATERIALS AND LABOR PRICES

Market quotations on construction materials and wage rates reported monthly by ENR correspondents
September Materials and Labor Prices will appear in the September 8, 1949 issue

CEMENT, AGGREGATE, READY-MIXED CONCRETE—F. O. B. CITY

	PORTLAND CEMENT* Per bbl. C/L lots incl. $1.00 per bbl. for bags, cash. dis. not deducted			SAND AND GRAVEL Per ton, carload lots			CRUSHED STONE Per ton, carload lots		CRUSHED SLAG Per ton, carload lots, f.o.b. plant		CONCRETE BLOCK 8 x 8 x 16-in.; truckload del.; per block		CONCRETE Ready Mixed 1:2:4, over 50 c.y., del.
	Cloth	Paper	Bulk	Gravel, 1½ in.	Gravel, ¾ in.	Sand	1½ in.	¾ in.	1½ in.	¾ in.	Sand gray	Lt. wgt. agg.	
Atlanta	$4.11	$3.36	$3.05	$2.00	$2.00	$1.75	$2.10	$2.10	$1.65	$1.85	$0.1725	$0.1725	$11.00
Baltimore	4.06	3.26	3.00	2.30‡*a*	2.30‡*a*	1.95‡*a*	2.40‡*a*	2.70‡*a*	2.45‡*a*	2.45‡*a*	.16	.16*a*	10.25
Birmingham	3.80	3.05	....	2.06	2.06	1.66	2.50	2.50	1.00	1.20	.165	.165	7.75
Boston	4.50	3.75	3.44	2.50*a*	2.50*a*	2.50*a*	1.60*a*	1.70*a*	....	....	.17	.185*a*	10.50*h*
Chicago	3.61/3.67	2.86/2.92	2.56/2.62	2.75‡*b*	2.75‡*b*	3.20‡*b*	2.75‡*b*	2.75‡*b*	2.00‡	2.00‡	.20	.20*b*	....
Cincinnati	4.13	3.30	3.07	1.85‡*c*	1.85‡*c*	1.75‡*c*	2.20‡*h*	2.20‡*h*	1.50	1.50	.19	.205	10.60*d*
Cleveland	3.92	3.17	2.87	1.90*def*	1.65*df*	1.55*d*	3.55‡*a*	3.55‡*a*	2.75	2.75	....	.21	11.80*g*
Dallas	3.57	2.82	2.52	2.00	2.15	1.75	2.10	2.15	....	....	.089*e*	.125	9.30
Denver	....	3.59	3.29	1.85	2.00	1.15	....	....	....	....	.20	.23*a*	9.65
Detroit	3.78	3.01	2.73	3.00‡*b*	2.95‡*b*	2.75‡*b*	3.00‡	3.00‡	3.00‡	3.00‡	.17	.18*a*	9.15*f*
Kansas City	3.91	3.16	2.85	1.95	1.95	1.30	1.45*d*	1.45*d*	....	....	.15*aq*	.20*eh*	10.40*b*
Los Angeles	....	3.72*a*	3.32*a*	1.94‡*a*	2.04‡*a*	1.74‡*a*	1.92‡*a*	1.92‡*a*	....	....	.075*f*	.115*f*	9.98*h*
Minneapolis	4.09*cd*	3.29*cd*	3.03*cd*	2.20‡*aq*	2.20‡*aq*	1.35‡*aq*	2.50‡*aq*	2.50‡*aq*	....	....	.21*i*	....	10.30*fi*
Montreal	....	2.46*ac*	2.31*ac*	1.25*hi*	1.75*hi*	....	.85*ij*	1.10*ij*	....	....	.22	.16*a*	9.05*ek*
New Orleans	....	3.07	2.75	2.32	2.32	1.82	....	....	1.05	1.25	.23	....	10.65
New York	4.21	3.46	3.15	2.00*bk*	2.00*bk*	1.45*bk*	2.25*bl*	2.25*bl*	....	....	.18*h*	.18*ah*	10.50*a*
Philadelphia	3.90 4.20‡	3.15 3.45‡	2.84 3.14‡	2.30‡	2.40‡	2.05‡	1.90‡	1.95‡	1.50	1.50	18/.22	....	9.85
Pittsburgh	3.90	3.18	2.85	2.05‡	2.05‡	3.00‡	2.50‡	2.50‡	2.05	2.05	.22*d*	.22*d*	10.85
St. Louis	3.80*b*	3.05*b*	2.75*b*	2.60‡*am*	2.40‡*am*	2.00/2.40‡*am*	1.60*ij*	1.60*ij*	1.15	1.15	.215	.24*cs*	10.40
San Francisco	....	3.39	2.99	1.84	1.84	1.94	1.94	....	....	....	....	.25*c*	10.75
Seattle	....	3.45*a*	2.95*a*	2.75‡*bm*	2.75‡*bm*	2.75‡*bm*	3.50‡*bm*	3.50‡*bm*	....	....	.22*ij*	.31 35	9.75*ij*

‡ Delivered. * Prices incl. dealers comm. except as noted.
CEMENT: *a* Subj. to 10¢ dis. *b* Less 2% for cash. *c* CL price dealers' comm. not incl. *d* Dealers sell only LCL.
SAND, GRAVEL, STONE & SLAG: *a* Truck lots. *b* Per cu. yd. *c* 5 tons or more. *d* F.o.b. plant. *e* 1". *f* Pea gravel. *g* Less 5% for cash. *h* Less than 5 tons. *i* Sales tax incl. *j* F.o.b. quarry. *k* Barge lots dsd. F.o.b. scow Hudson River. *m* Less 2% for cash.
CONCRETE BLOCK: *a* Cinder. *b* Waylite. *c* Haydite. *d* Celocrete. *e* 5⅓ x 8 x 12 in. *f* 4 x 8 x 12 std. wgt. *g* F.o.b. truck at job. *h* F.o.b. plant. *i* Less 2% for cash. *j* Less 1% for cash.
READY MIXED CONCRETE: *a* 5 cu. yds. or over del. Man. *b* 25 cu. yds. or more. *c* 10–100 cu. brackets. *d* Truck loads up to 500 cu. yds. *e* 2,000 lb. concr. *f* 2500 lb. comp. *g* Aver. haul 7–9 mi. zone. *h* Less 50¢ for cash. *i* 5% off for cash. *j* 2% off for cash. *k* Sales tax included.

CASH DISCOUNTS CEMENT to Contractors: Truck delivery, 2% for cash on 10th of month; on carload deliveries, no trucking, same as dealer cash discount 10c. per bbl. for payment within 15 days of date of invoice. Subject discount 10c. per bbl. 20 days in Montreal.

CURRENT MAXIMUM PRICES AT CEMENT MILLS

Charge for bags not included. For cloth bags, add $1.05 per bbl.; 25¢ refund allowed for each returnable bag; for paper bags add 28¢ per bbl., not refundable

	Bulk		Bulk		Bulk		Bulk
Richard City, Tenn.	$2.40†	Buffington, Ind.	$2.20	Steelton, Minn.	$2.40	Muskegon, Mich.	$2.40†
Clinchfield, Ga.	2.40†	Independence, Kan.	2.30	Leeds, Ala.	2.25	Saginaw, Mich.	2.35†
Kingsport, Tenn.	2.40†	Hannibal, Mo.	2.35	Duluth, Minn.	2.40	Wyandotte, Mich.	2.40†
West Des Moines, Iowa.	2.30†	Northampton, Pa.	2.30	Hudson, N. Y.	2.30	Buffalo, N. Y.	2.40†
Nazareth, Pa.	2.30†	Universal, Pa.	2.30	Alpena, Mich.	2.25†	Oswego, N. Y.	2.50†
Bath, Pa.	2.30†	Waco, Tex. (+ 9¢ tax)	2.20	Detroit, Mich.	2.40†	Cleveland, O.	2.40†
						Toledo, O.	$2.40†
						Milwaukee, Wis.	2.40†
						Green Bay, Wis.	2.40†
						Ironton, O.	2.30
						Montreal City	2.13
						W. Winfield, Pa.	2.30†

‡ *Prices to hold for third quarter of* 1949.

PAVING BRICK, BLOCK, ASPHALT, ROAD OILS—F. O. B. CITY

	PAVING BRICK AND BLOCK Granite Per M lots of 50,000 4x4x8 in.	Brick per M 3x4x8½ in. carload lots	Wood per sq. yd. 3½ in. 16-lb. treat	PAVING ASPHALT Per ton, less than 80 penetration Tank car	Drums	ASPHALT BINDERS—FLUXES Per gal., 80–300 penetration Tank car	Drums	CUTBACK ASPHALT Per ton Tank car	Drums	ROAD OIL Per gal. Tank car	ASPHALT EMULSION (Quick-breaking) Per gal. Tank car	Drums
Atlanta	$73.00	$35.00	$2.25	....	....	....	....	....	....	....	....	....
Baltimore	150.00‡	57.70‡	.....	$23.00	.....	$.095	$0.15	$.095	$.17	$.095*i*	$.095	$0.115
Birmingham	.....	32.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boston	.....	.....	.....	24.50*a*	$35.50*a*	.1036*a*	.185*a*	.115*aw*	.205*aw*	.10*a*	.113*a*	.205*a*
Chicago	150.00‡*a*	85.00/88.00‡*b*	3.10/4.15‡*f*	20.25*b*	30.25*b*	19.25*bv*	29.25*bv*	.0875*bw*	.....	.075*b*	.1025/.1075*b*	.15/.1075*b*
Cincinnati	.....	.....	.....	22.50*k*	....	.1025	.0990	.0965*w*	.0965	....	....	....
Cleveland	.....	49.00‡	3.68*q*	25.00	35.00	25.00*v*	34.50*v*	.115*w*	.22*w*	.10	.12	.25
Dallas	*e*	40.00	*e*	23.95	42.97	.1012	.1898	26.99	47.77	.0987	.1062	.1423
Denver	.....	43.00	.....	....	....	.....	.....	.....	.....	.....	.....	.....
Detroit	.....	.....	.....	28.45	....	.125	.....	.1188*w*	.....	.....	.....	.1925
Kansas City	.....	40.00*d*	.....	19.05*cl*	....	....	.....	.075*cw*	.0775*w*	.065*c*	.....	.....
Los Angeles	*e*	.....	*e*	13.50*dm*	.....	13.50*dv*	.....	15.00*d*	.....	13.50*dv*	.077*j*	.1575*j*
Minneapolis	.....	.....	2.83*f*	24.00	35.00	22.00*v*	33.00*v*	24.00	35.00	.085	.12	.22
Montreal	137.00	*e*	*e*	25.00*n*	34.65*n*	15.70*nu*	20.05*nu*	15.70*nu*	17.70*nu*	14.20*nu*	.174*n*	.215*nu*
New Orleans	.....	.....	.....	20.00*e*	....*o*	20.00*ev*	.....*o*	.095*ew*	.....*o*	.095	.0975	.16*t*
New York	.....	.....	2.35*f*	25.50	37.86*q*	24.50*v*	43.88*qv*	.1040*w*	.1867*qw*	.0990	.1040	.1847*q*
Philadelphia	150.00	80.00/90.00	4.06	23.00	....	22.00*v*	.....	.095*w*	.....	.....	.....	.....
Pittsburgh	165.00	42.00	4.50	22.00	36.00	.11	.23	27.00	37.00	.095	.10	.21
St. Louis	.....	.....	.....	21.65*f*	....	16.48	.....	.0925*w*	.....	.15	.1081	.1075
San Francisco	.....	57.75*c*	.....	15.50*g*	31.00*gp*	15.50*jkv*	.....	17.50*g*	.....	.....	.09	.16
Seattle	.....	.....	.....	15.50*h*	36.00*h*	16.00*hv*	.....	17.50*h*	21.50*hv*	16.00*hv*	.08*h*	.09*h*

‡ Delivered.
PAVING BRICK & BLOCK: *a* CL. *b* 3½ x 4 x 8½. *c* 2½ x 8½ x 4. *d* F.o.b. Buffalo, Kans. *e* Not used. *f* 2" interior 6# treat. *g* 3".
ASPHALTS: *a* Price at plant, Everett, Mass. *b* F.o.b. refinery, Lockport, Ill. *c* F.o.b. Sugar Creek, Mo. *d* F.o.b. refinery, El Segunda. *e* F.o.b. Baton Rouge. *f* F.o.b. Wood River or Roxana, Ill. *g* F.o.b. Richmond, Calif. *h* F.o.b. Martinez, Calif. *i* Bulk refinery. *j* F.o.b. refinery, Englewood, Calif. *k* 50-300 penetr. *l* Less than 100 penetr. *m* 40–80 penetr. *n* Tax incl. *o* Drums not avail. *p* Shipped in steel bbl. *q* Use of reconditioned drums. *r* In customer's drums. *s* Shipped in drums, per drum. *t* 55-gal. drums. *u* Per 100 gal. *v* Per ton. *w* Per gal.

IRON AND STEEL PRODUCTS—PER 100 LBS. BASE MILL PRICES

	STRUCT. SHAPES–PLATE	REINF. BARS*ab* Billet	RIVETS ½-in. struc-tural	SHEET PILING Base	STEEL RAILS Per Net Ton: Standard*c*	Light *cf*	Re-rolled	TRACK SUPPLIES: Angle Bars	Std Spikes	Tie Plates*g*	Track Bolts *d*
Birmingham Area	$3.25	$3.35	$6.75	...	$64.00	$71.00	Not	$4.25	$5.35	$4.05	...
Chicago Area	3.25	3.35	6.75	$4.05	64.00	71.00	avail-	4.25	5.35	4.05	...
Pittsburgh Area	3.25	3.35	6.75	4.05	64.00	71.00	able	4.25	5.25	4.05	....
Buffalo Area	3.30	3.35	6.75	4.05	64.00	71.00	....	4.25	5.35	4.05	$8.50
Cleveland	....	...	6.75	....	.....	.....	....	....	...	....	8.50
Youngstown Area	....	3.35	....	..	.....	.....	....	....	5.35	....	....
Geneva	3.25	....	....	...	.....	.....	...	.. ..	....	....	....
Los Angeles	....	4.25	....	....	.....	.....	....	....	5.35	....	....
Pueblo	3.25	3.35	....	....	64.00	71.00	....	4.25	5.35	4.05	8.50

a Fabricated: To consumers: $4.25; except $5.00 Seattle, Wash. *b* Rail steel price $3.85; Williamsport, Pa. *c* Rail steel $102 per ton Williamsport, Pa. *d* Treated. Untreated $8.25. $85.00 Minnequa, Colo. *e* Except $66.00 Minnequa, Colo. *f* Except $4.20 Pittsburg, Calif.; $4.50 Seattle, Wash. *g* Except $4.20 Pittsburg, Calif.; $4.50 Seattle, Wash.

IRON AND STEEL PRODUCTS—F. O. B. WAREHOUSE, PER 100 LBS., BASE PRICE

	STRUCTURAL SHAPES Per 100 lb. base price	REINFORCING BARS*g* Per 100 lb., base price *a*: 5 tons to carload lot *b* New billet	Rail steel	Add for switch	$/cwt. for Del.	EXPANDED METAL LATH*k* Per 100 sq. yd., carload lots: Std. diamond mesh, 3.4 lb.	Std. ribbed 3.4 lb.	WELDED FABRIC REINFORCING*d* Per 100 sq. ft., carload lots: 4x16 in., No. 5 & 10 wires	4x12 in., No. 8 & 12 wires	6x6 in., No. 6 & 6 wires
Atlanta	$4.75	$5.225*k*	$5.225*k*	$.025	$.10	$31.50	$31.50			
Baltimore	5.51	4.47*l*	....	....	.10	40.00	43.00			
Birmingham	5.08	5.08	5.50	.05	.15	43.00*p*	45.50*p*			
Boston	5.57*k*	5.46*k*	5.34*kr*	....	.10/.15	31.00	33.00			
Chicago	5.05	4.70*ff*	4.70*ff*	.05	....	31.00‡	33.00‡			
Cincinnati	5.43*r*	5.43*r*	....	.. ..	....	31.00*ee*	33.00–*ee*			
Cleveland	5.01*hh*	4.37*t*	....	....	.10	34.50	36.50			
Dallas	6.50	6.50	6.50	.. ..	.. ..	43.50	46.00			
Denver	6.45	6.65*e*	....	....	.. ..	47.00*s*	44.50*qs*			
Detroit	5.28	....	....	....	.10	30.00*x*	37.00*q*			
Kansas City	5.50	4.80*ll*	....	....	....	37.00	39.00			
Los Angeles	5.75*f*	5.25*bb*	....	....	.15	37.00*f*	41.00*kk*			
Minneapolis	5.20	5.20*ll*	5.20*ll*	....	.15	34.50	36.50			
Montreal	5.25*i*	5.15*i*	5.15*i*	....	....	44.10*h*	46.80*h*			
New Orleans	....	5.00*ok*	....	.05	.10	32.00	32.00			
New York	5.13*r*	5.50	5.50	....	.15/.20	33.00*st*	35.00*st*			
Philadelphia	5.25	5.36	....	....	....	30.00‡	32.00‡			
Pittsburgh	4.30/4.40	4.30/4.40	4.30/4.40	.05	.10	32.50	34.50			
St. Louis	5.42*r*	5.28*c*	5.28*c*	...	...	42.00*aa*	48.00*aa*			
San Francisco	5.90*xi*	5.65	....	....	....	36.50	38.50			
Seattle	5.90*r*	5.25*vl*	....	....	....	52.00*smm*	42.00*smmx*			

A.P.M.* Joliet, Illinois, Donora, Penn., $2.36; F.o.b. Mill: Monessen, Penn., $2.36

A.P.M.* Joliet, Illinois, Donora, Penn., $1.63; F.o.b. Mill: Monessen, Penn., $1.64

A.P.M.* Joliet, Illinois, Donora, Penn., $2.47; F.o.b. Mill: Monessen, Penn., $2.48

*At Prodenco Mill

‡ Delivered. *a* Mill prices. *b* 1–5 tons, add 35c. Less than 1 ton, add 50c. *c* 20 tons or over base. *d* Mill price plus freight. *e* F.o.b. plant. *f* Includes delivery in free delivery zone. *g* High scrap steel prices cut former 15c differences between new billet and rail steel. *h* List price. *i* Dominion tax exempt. Provincial and Municipal tax extra. *j* Plus Dominion, Provincial and Municipal sales tax. *k* F.o.b. city. *l* Price per ton. *m* Per sq. yd. *n* 5 to 15 tons base. *p* Del. of 5000 sq. yd. or less. *q* Std. ribbed 4 lb. per sq. yd. *r* 5 tons or over. *s* LCL. *t* Asphalt coated. *u* Note: Revised size extra—1 in., 1¼ in., 1½ in. 10c, ¾ in., ⅞ in 15c, ⅝ in. 20c, ½ in. 35c, ⅜ in. 55c, ¼ in. $1.30. *x* Under 20 tons. Straight. *w* Copper bearing. *x* 2.5 lb. per sq. yd. *y* $.0003 transportation tax included. *z* Copper alloy. *aa* Delivered truck to job. Contractor to do unloading. *bb* Includes 55c extra for ⅞ in. size. *dd* F.o.b. dock. *ee* F.o.b. cars. *ff* Carload lots. *gg* Including sales tax. *hh* Delivered price is $5.01. *ii* Rolled at Geneva mill. Shapes rolled at Fontana, $6.90. *kk* ¼" ribbed. *ll* 5 to 8 tons. *mm* 2% off for cash.

PLUMBING, HEATING, WATER, SEWER AND DRAIN PIPE

	C. I. PIPE: Per net ton f.o.b. 6 in. to 24 in *a*	VITRIFIED SEWER PIPE: Per foot, Delivered, ASTM C13–44T: std. 8 in. s.s.;	std. 12 in. s.s.;	24 in. ds.;	36 in. ds.	CLAY DRAIN TILE: ASTM C4–24 Per 1,000 ft., carload lots, f.o.b. 6 in.	8 in.	CONCRETE SEWER PIPE: Per ft., delivered; ASTMC 14–41 12 in.	24 in.
Atlanta	$89.50	$0.43	$0.67	$3.39	$7.00	$114.00	$140.00	$0.45	$2.00
Baltimore	93.86	.52	.975	4.21	9.34	178.20	228.00	.80	2.25
Birmingham	82.50	.40	.72	2.84	....	210.00‡	375.00‡	.90	2.50
Boston	97.46	.441*urx*	.8505*urx*	3.87*ury*	10.36*ury*	173.40	267.60	1.45‡*mv*	3.60‡*mv*
Chicago	96.49	.59	1.14	4.81	13.45	150.00‡	270.00‡	.70	2.35
Cincinnati	94.90	.427	.8505	3.37	10.25	220.00‡	340.00‡	.60	2.25‡
Cleveland	97.13	.357*x*	.6885*x*	3.015*x*	8.405*x*	147.50	231.00	.65	2.50
Dallas	99.28	.365	.657	2.63	6.25	.....	.....	.49	1.60
Denver	104.36	.41*dd*	.71*dd*	2.98*dd*	....	.....	.....	.74*dd*	2.50*dd*
Detroit	92.13	.55	1.06	4.18	12.09	200.00‡*m*	310.00‡*m*	.65	2.50
Kansas City	98.41	.418*m*	.76*m*	3.00	....	215.00*m*	375.00*m*	.60*l*	2.00*l*
Los Angeles	111.06	.426	.927	4.532	11.208	193.00‡	324.00‡	.72	....
Minneapolis	100.67	.62*no*	1.12*no*	4.35*no*	....	.....	.....	1.29*h*	3.67*h*
Montreal	100.00	.77*s*	1.35*s*	4.47*s*	8.50*es*	.60*p*	48*p*	75.00*jkaa*	240.00*jkaa*
New Orleans	92.68	.412	.762	3.955	9.15	231.00*bb*	405.00*bb*	.55	1.95
New York	92.80/97.50	.62	1.14	4.45	12.30	.....	.....	1.00	2.50
Philadelphia	90.47	.54	.99	4.08	10.28	235.00‡	300.00‡	1.25*h*	3.20*h*
Pittsburgh	97.76	.364*m*	.702*m*	2.70*m*	6.625*m*	134.20	197.40	1.05*h*	2.50*g*
St. Louis	94.27	.48	.87	3.42	8.05	.....	.....	1.10*il*	2.20*hl*
San Francisco	111.06	.50*d*	.99*d*	4.32*d*	10.80*d*	188.00*dl*	313.00*dl*	.69	2.85
Seattle	112.95	.51*b*	.91*b*	....	....	150.00*e*	.....	80*ee*	2.40

‡ Delivered. † F.o.b. *a* R. & S. class B and heavier, CL, Burlington, N. J. (base) $87.50*. Based on existing freight rates; subject to rate change. Gas pipe and class A, $5 per ton additional. 4 in., $5 per ton additional; 30 in. and larger, usually $1 per ton less. *b* Extra strength ASTM C 200-44T. *c* 4-in., $90. *d* SS361-A. *e* 30 in. *g* Culvert pipe. Reinforced, ASTM C76-44. *h* Reinforced, ASTM C75-43. *i* Reinforced, ASTM C76-37. *j* Centrifugun. *k* Per 100 ft. *l* F.o.b. plant. *m* Truck delivery. *o* Listed price is based on LCL (no minimum). *p* Less than 5 ton loads, price per ft. *r* Within switching limits. *s* ASTM C13-40. *t* F.o.b. city. *x* 2–11 lengths. *y* 3 ft. lengths. *z* CESA A 60-1941 specifications used. *no* No standard specifications in Can. *bb* Freight allowed to destination in city. *ee* Truck loads; f.o.b. plant, Newton. *dd* LCL, delivered, f.o.b. truck. *ee* 1% 60 for cash. * May $91.50, June and July $87.50.

* WROUGHT STEEL PIPE: Discounts from standard list consumers carload prices. Base price approx. $200 per net ton. List prices per ft., *Butt Weld*, ⅛ in., 5½¢; ¼ in., 6¢; ⅜ in., 6¢; ½ in., 8½¢; ¾ in., 11½¢; 1 in., 17¢; 1¼ in., 23¢; 1½ in., 27½¢; 2 in., 37¢; 2½ in., 58½¢; 3 in., 76½¢. *Lap weld*: 3½ in., 92¢; 4 in., $1.09; 5 in., $1.48; 6 in., $1.92. Freight rates to destination to be added to price plus 3 percent tax on transportation.

WROUGHT IRON PIPE: List prices per ft. same as wrought steel pipe. Discount for Pittsburgh base. *Butt weld*—1 in. and 1¼ in. black, +4.5, galv. +27.0; 1½ in. black, 1.5, galv. +23.5; 2 in. black 2, galv. +23.0. *Lap weld*—2½ in. to 3½ in. black + 5, galv. +26.5; 4½ in. to 8 in. black + 2, galv. +22.0. Freight rates to destination to be added to name delivered price.

Mill	*Wrought Steel Pipe (Full standard weight): 3½ to 6 in., Butt Weld, Galv. %*	*Butt Weld, Black %*	7 in. & 8 in., Butt Weld, Galv. %	*Butt Weld, Black %*	9 in. to 12 in., Lap Weld, Galv. %	*Lap Weld, Black %*	13 in. to 18 in., Lap Weld, Galv. %	*Lap Weld, Black %*
Lorain, Ohio	.....	.....	38.5	50.5	35.5	50.5	35.5	50.5
Aliquippa, Pa	.....	.....	33.5	50.5	35.5	50.5	35.5	50.5
Sparrows Pt., Md	.....	.....	33.5	48.5	34.5	49.5	34.5	49.5
Benwood, W. Va	.....	.....	35.5	50.5	35.5	50.5	35.5	50.5
Youngstown, O	.....	.....	35.5	50.5	35.5	50.5	35.5	50.5
Indiana Harbor, Ind	.....	.....	35.5	50.5	35.5	50.5b	35.5b	50.5b
Sharon, Pa	.....	.....	35.5	50.5	35.5	50.5	35.5b	50.5b
Wheatland, Pa	.....	.....	35.5	50.5	35.5	50.5	46.5a	31.0a
Etna, Pa	.....	.....	35.5	50.5b	44.5	44.5	31.0a	18.0ab
Fontana, Calif	.....	.....	39.5b	24.5b	33.5ab	42.5	27.0	b Continuous

†Threaded and coupled. a 3½ to 4 in. welded

LUMBER, TIMBER, PLYWOOD—PER M FT., B.M., CARLOAD LOTS F. O. B.

SHORT LEAF YELLOW PINE AND DOUGLAS FIR

All S. L. Y. P. is No. 2 common or better and for No. 1 N. C. Box.

(Prices in Bold Face)

All Fir boards, dimension, planks No. 2, Fir small timbers and timbers is No. 1. Lengths up to 20 ft.

(Prices in italics)

	1x6 s4s	1x8 s4s	2x4 s4s	2x6 s4s	2x8 s4s	2x10 s4s	3x12 Rgh	6x12 Rgh	12x12 Rgh
Atlanta	† **$70 00**	**$71 00**	**$60 00**	**$62 00**	**$65 00**	**$68 00**	**$70 00**	.....	.....
Baltimore	**65 00**	**65 00**	**60 00**	**62 00**	**64 00**	**68 00**	**85 00**	.....	.....
	82 00	*82 00*	*78 00*	*78 00*	*78 00*	*84 50*	*81 00*	*81 00*	
Birmingham	**83 00**	**87 50**	**73 00**	**75 00**	**78 00**	**82 50**	**95 00**	.....	.....
	80 00	*80 00*	*77 00*	*77 00*	*77 00*	*98 00*	*93 00*	*93 00*	
Boston	77 00*a*	77 82*a*	82 00*a*	82 00*a*	82 00*a*	87 00*a*	.....	.....	.....
	88 00	*88 00*	*90 00*	*78 00*	*98 00*	*98 00*	*98 00*	*98 00*	
Chicago	‡ **76 78**	**79 80**	**70 72**	**75 77**	**74 76**	**80 82**	**86 88**	.....	.....
	‡ *79 81*	*82 85*	*80 82*	*80 50 82*	*82 84*	*82 84*	*84 85*	*88 90*	*88 90*
Cincinnati	**80 50**	**83 00**	**83 00**	**83 00**	**83 00**	**98 00**	**123 00**	.....	.....
	110 00	*115 00*	*95 00*	*105 00*	*110 00*	*115 00*	*125 00*	*125 00*	
Cleveland	**68 70**	**70 72**	**63 00**	**68 72**	**73 75**	**76 78**	.....	.....	.....
Dallas	† **58 00**	**58 00**	**58 00**	**54 00**	**56 00**	**58 00**	**90 00**	.....	.....
Denver	*Not in Stock*		*90 00*	*89 00*	*89 00*	*89 00*	*89 00*	*121 00*	*120 00*
Detroit	*h* **70 00**	**71 00**	**65 00**	**70 00**	**70 00**	**75 00**	.....	.....	.....
	77 00	*95 00*	*85 00*	*85 00*	*85 00*	*82 75*	.....	.....	.....
Kansas City	**100 00**	**100 00**	**90 00**	**95 00**	**95 00**	**100 00**	**110 00**	.....	.....
	e 85 00	*85 00*	*90 00*	*95 00*	*90 00*	*90 00*	*100 00*	*125 00*	*125 00*
Los Angeles	* *68 00*	*68 00*	*68 00*	*68 00*	*68 00*	*68 00*	*70 00*	*80 00*	*70 00*
Minneapolis	‡ *100 00*	*100 00*	*100 00*	*100 00*	*100 00*	*100 00*	.....	.....	.....
Montreal	*ab* **73 00**	**76 00**	**73 00**	**75 00**	**76 00**	**85 00**	.....	.....	.....
	155 00	*155 00*	*155 00*	*155 00*	*155 00*	*155 00*	.....	*135 00*	.....
New Orleans	† **66 00**	**70 00**	**70 00**	**75 00**	**75 00**	**70 00**	*85 00*	.....	.....
	† *68 70*	*68 70*	*71 00*	*75 00*	*72 50*	*72 50*	*67 00*	*67 00*	*67 00*
New York	‡ **80/85**	**82.50/87.50**	**Range from $72.50 to $82.50**				**95/100**		
	‡	.....	*Range from $87.50 to $95.00*				.....	*102.50/115*	*102.50/115*
Philadelphia			**Range from $90.00 to $100.00**				**90/100**	.....	.....
			Range from $105.00 to $115.00				105/115	*122.00*	*122.00*
Pittsburgh	† **75/80**	**75/80**	**75 80**	**75 80**	**75 80**	**70 86**	**100 00**	.....	.....
	† *80/100*	*90/100*	*90/100*	*100/110*	*100/110*	*100 110*	*120/130*	*120 00*	*120 00*
St. Louis	‡*c* **85 00**	**87 25**	**74 25***d*	**84 25***d*	**91 75***e*	**94 00***e*	.....	.....	.....
	‡*c*	.....	*99 50e*	*101 25e*	*102 25e*	*102 25e*	*106.50*	*130.00*	*130.00e*
San Francisco	† *68.00*	*68.00*	*68.00*	*68.00*	*68.00*	*65.00*	*65.00*	*65.00*	*65.00*
Seattle	† *62.50g*	*62.50g*	*62.50g*	*62.50g*	*62.50g*	*62.50g*	*62.50g*	*62.50g*	*62.50g*

	LONG LEAF Y. P. Merchantable grade up to 20 ft. 2x12 Rgh	LONG LEAF Y. P. Merchantable grade up to 20 ft. 12x12 Rgh	PLYWOOD Rail freight increment* (See note for base price) ⅜"	PLYWOOD Rail freight increment* (See note for base price) ¾"
Atlanta	.....	.....	**$22 32**	**$27 24**
Baltimore	160 00	160 00	22 86	27 90
	.....	.....	.....	.....
Birmingham	130 00	125 00	21 78	26 58
	.....	.....	.....	.....
Boston	105 00	105 00	22 86	27 90
	.....	.....	.....	.....
Chicago	112/114	112/114	18 72	22 80
	.....	.....	.....	.....
Cincinnati	118 00	128 00	21 78	26 58
	.....	.....	.....	.....
Cleveland	.....	.....	22 20	27 12
Dallas	83 00	90 00	18 72	22 80
Denver	.....	.....	13 92	16 98
Detroit	.....	.....	21 78	26 58
	.....	.....	.....	.....
Kansas City	.....	.....	16 56	20 16
	.....	.....	.....	.....
Los Angeles	.....	.....	13 38*ab*	16 26*ab*
Minneapolis	.....	.....	16 56	20 16
Montreal	.....	.....	.....	.....
	.....	.....	.....	.....
New Orleans	100 00	105 00	18 72	22 80
	.....	.....	.....	.....
New York	175/200*f*	175/200*f*	22 86	27 90
	.....	.....	.....	.....
Philadelphia	166 00	166 00	22 86	27 90
	.....	.....	.....	.....
Pittsburgh	.....	.....	22 56	27 48
	.....	.....	.....	.....
St. Louis	104 75	*137.50*	18 72	22 80
	.....	.....	.....	.....
San Francisco	.....	.....	10 08*a*	12 30*a*
Seattle	.....	.....	.....	.....

† F.o.b. mill. ‡ Delivered. * Retail-LCL. * Yard prices.

LUMBER: **Bold Face type, Southern Pine.** *Italics, Douglas Fir.* *a* Spruce *b* Tax exempt. *c* 5M lots. *d* 8-12 ft. lengths. *e* 8-16 ft. lengths. *f* 18 ft. or under. *g* No. 1 common. *h* July prices were No. 3.

PLYWOOD: Special concrete form grade Fir Plywood, 4' by 8' panels, 5-ply, sanded 2 sides, water resistant glue, carload lots, delivered per 1,000 sq. ft. surface. Seattle base price on ¼", $123.50; on ⅜", $147.00. For other centers add rail freight increment from table on proper size. Oiling and edge sealing charges included. *a* Lower rate by water shipment. *b* 50,000 lb. minimum.

* Freight rate increase of 4¢ per cwt., effective Jan. 11, not included in these figures.

GLASS, EXPLOSIVES, CHEMICALS

	WINDOW GLASS Discounts from jobbers list, Jan. 16, 1946 Single or Double Thickness A quality	WINDOW GLASS Discounts from jobbers list, Jan. 16, 1946 Single or Double Thickness B quality	EXPLOSIVES Per lb. 40% Ammonia Gelatin in 50 lb. cases delivered in 200 lb. lots*
Atlanta	76%	76%	$0.2025
Baltimore	66-10%	67-10%	.2025
Birmingham	68%	68%	.1575
Boston	.....	60%*i*	.2025
Chicago	67%	67%	.2025
Cincinnati	66-10%*e*	66-10%*e*	.2025
Cleveland	66-10-10-10%	66-10-10-10%	.2425
Dallas	65%	65%	.215
Denver	67%	67%	.2075
Detroit	66-10-10%	66-10-10%	.2025
Kansas City	65%*e*	65%*e*	.2075
Los Angeles	58%	63%*f*	.21
Minneapolis	64%	64%	.2075
Montreal	40-5%*bc*	40-10-5%*bc*	18.90*h*
New Orleans	68%	68%	.2125
New York	71%	72%	.32*g*
Philadelphia	70%	70%	.2025
Pittsburgh	70%	70%	.175
St. Louis	70-10%	70-10%	.2075
San Francisco	66%	73%	.2075
Seattle	54%	55%	.21

Price of 60% Ammonia Gelatin is $0.0125 per lb. higher than 40%

Glass: *a* Jobbers' list price per box, 14 x 20, ss, $20.75 for A quality, $18.00 for B quality; 14 x 20, ds, $30.75 for A quality, $26.00 for B quality. *b* Discount from list, Sept. 1939; sales tax included, but 6% tax exemption not allowable for. *c* Single thickness. *e* Discount from list of Aug. 15, 1938. *f* ss; ds—6½%. *i* Double thickness 65%.

Explosives: * Urban prices influenced by service charges or local storage and delivery regulations do not consistently reflect quantity prices in less congested areas. *g* In borough of Kings, Queens, and Richmond and in Manhattan south of Canal St., add delivery charge of $9.00 per trip. *h* F.o.b. city per 100 lb. forcite, 40%. Forcite 60%, $20.65.

40% Ammonia Gelatin price ranges in other than urban areas, per lb. (except Seismograph Grades)

	C. L. 20,000 lb. net	Tons	200 lb. lots
E. of the Miss., except Fla. and Me.	$0.155	$0.1825	$0.2025
W. of Miss. to Rocky Mtn. States, Fla. and Maine	.16 – .1675	.1875–.20	.2075–.22
Rocky Mtn. States	.16 – .1725	.1875–.20	.2075–.225
Pacific N. W. States	.1575–.17	.19 – .2025	.21 – .2225
Pacific S. W. States	.155 – .1625	.1875–.195	.2075–.2175

PILES, TIES F. O. B.

PILES

Prices per linear foot, fir and pine, bark off, f.o.b. cars, New York. Fir based on Wash. and Ore. points to New York shipping area; pine based on freight from Norfolk.

Dimensions	Points	Length	By Rail Pine*	By Rail Fir
12-in. at butt	6-in.	30 to 50-ft.	$0.43	.....
12-in.—2-ft. from butt	6-in.	50 to 59-ft.	.46	.....
12-in.—2-ft. from butt	6-in.	60 to 69-ft.	.50	.....
12-in.—2-ft. from butt	6-in.	90 to 100-ft.	.....	.79
13-in.—3-ft. from butt	5-in.	91 to 100-ft.	.....	.80
14-in.—2-ft. from butt	6-in.	50 to 69-ft.	.50	.87
14-in.—2-ft. from butt	6-in.	70 to 79-ft.	.54	.81
14-in.—2-ft. from butt	5-in.	80 to 85-ft.	.67	.82
14-in.—2-ft. from butt	5-in.	85 to 89-ft.	.....	.83
14-in.—2-ft. from butt	5-in.	90 to 100-ft.	.....	.87

* Pine piling over 80-ft. available only in limited quantities.

RAILWAY TIES

Prices f.o.b. per tie for carload lots:		6"x8"x8' Untr.	6"x8"x8' Tr.	7"x9"x8'6" Untr.	7"x9"x8'6" Tr.
Boston	Oak	.....	.....	.....	.....
	Pine	.....	.....	.....	.....
New York	S. L. Sap Pine	$1.65	$2.85	$2.00	$3.30
	Mixed Oak	1.80	3.05	2.50	3.60
Birmingham	Hardwood	1.00	1.60*a*	.....	2.25*a*
Chicago	Red Oak	.....	2.55/2.60*a*	.....	3.40/3.65*a*
Los Angeles	Douglas Fir	.....	3.00*a*	.....	.....
	Redwood	1.86	.....	.....	.....
Philadelphia	Red Oak	2.33	3.13*a*	3.10	4.25*a*
St. Louis	White Oak	2.42	.....	3.22	.....
	Red Oak	2.32	2.97*a*	3.12	4.05*a*
	Sap Pine or Cypress	3.04*a*	.....	3.83	.....
San Francisco	Douglas Fir	1.28*c*	2.24*f*	1.70*bf*	3.05*af*
Montreal	Birch or Maple	....*h*	....*h*	....*h*	....*h*

Tr.—Treated; Untr.—Untreated. *a* Creosoted. *b* 7" x 9" x 8'. *c* Empty cell. *e* Green. *f* F.o.b. cars. *h* No constant price available. *i* Not available

CHEMICALS

Water, sewage treatment, road work, f.o.b. carlots, New York

Bleaching powder in drums f.o.b. works, per 100 lb.	$4.25
Chlorine cylinders, liquid, per lb. f.o.b. works	.07–.12
Calcium chloride, 77–80%, flaked, 100-lb. paper bag, f.o.b. works, ton	22.00
Silicate of soda, 52 deg., in drums, f.o.b. works, per 100 lb.	1.80
Soda ash, 58%, in paper bags, per 100 lb. dense	1.50
Sulphate of aluminum, commercial, in 100-lb. bags f.o.b. works	1.50
Sulphate of copper, in bags, 99% per 100 lb f.o.b. works	7.00

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SYSTEM PLANNING SERVICE

STRUCTURAL CLAY BUILDING TILE, BRICK AND LIME—DELIVERED

	STRUCTURAL CLAY TILE PARTITION — SCORED Per M. lots of 2,000 pieces or over.			STRUCTURAL CLAY TILE — LOAD BEARING — SCORED Per M. lots of 2,000 pieces or over.			BRICK Per M. in quantity		LIME Per ton, In paper, Carload lot.		
	3x12x12 in.	4x12x12 in.	8x12x12 in.	8x12x12 in.	10x12x12 in.	12x12x12 in.	Common backing	Straight hard	Hydrated finishing	Common hydrated	Pulverised or lump
Atlanta							$25.00	$25.00	$19.00	$17.50	$17.50
Baltimore	$170.00	$180.00	$320.00	$375.00	.....	.....	32.00*k*	35.00*k*	30.00	20.00	.....
Birmingham	97.50	104.00	195.00	231.00	.....	.....	20.00*ff*	22.50*qq*	24.67	18.10	.....
Boston	145.65†	155.35†	291.30†	330.15†	.....	.....	32.00*x*	35.00*x*	30.80†	26.40†	.....
Chicago	115.00	122.50	230.00	.....	.....	.....	21.00	23.00	28.50	19.50	.....
Cincinnati	168.00*j*	178.00*j*	238.00*dd*	328.00*j*	.....	.....	32.50*j*	38.00*j*	22.25*j*	20.50*j*	.....
Cleveland	118.00*cc*	126.00*cc*	236.00*cc*	.....	.....	.....	28.50	28.50	24.00	22.00	27.50*ss*
Dallas	.....	110.00	.....	.....	.....	.....	18.75	33.25	28.00	22.00	.....
Denver	.....	.....	.....	.....	.....	.....	32.00	32.00	34.80*bb*	28.00*bb*	34.00*bb*
Detroit	117.08	124.88	234.15	234.15	$290.68	$332.20	30.00*cc*	31.50*cc*	30.00	28.00	.....
Kansas City	115.50	125.00	.....	.....	.....	.....	22.00*o*	25.00*o*	36.00*p*	30.00*p*	30.00*p*
Los Angeles	*r*	*r*	*r*	*r*	*r*	*r*	20.00§	.....	.....	36.00	32.00
Minneapolis	158.00*p*	176.00*p*	330.00*p*	176.00*wp*	.....	.....	30.00*rp*	34.00	35.00*bbe*	26.00*bbe*	35.00*bbde*
Montreal	110.00*aq*	120.00*aq*	225.00*aq*	.....	.....	.....	25.50	37.00	23.40*u*	14.00*ub*	.....
New Orleans	160.00	160.00	300.00	.....	.....	.....	29.00	.....	38.00	26.00	37.50
New York	118.20*h*	126.00*h*	173.30*eh*	189.00*hn*	.....	.....	33.00	.....	34.80	26.80	.....
Philadelphia	126.30	134.80	252.60	302.74	361.35	455.74	27.00	30.00	29.75	17.50	24.50
Pittsburgh	98.50	105.80	181.85	207.30	265.85	303.60	26.00	38.00*y*	20.45	16.65	2.97*m*
St. Louis	120.00	138.50	252.50	252.50	339.50	.....	32.50*al*	30.50*al*	.80*aaap*	.60*aaap*	1.00*aaspss*
San Francisco	132.00*a*	148.50*a*	198.00*dda*	148.50*a*	.....	.....	32.00	.....	24.95	24.95	2.49*m*
Seattle	150.00*cc*	160.00*cc*	.....	160.00*ccvv*	.....	.....	32.00*s*	39.00*s*	32.00*aAA*	32.00*aAA*	3.60*mAA*

† F.o.b. *a* Smooth. *b* Per 50 lb. bags. *c* 6 x 12 x 12 in.-3 cell. *d* Pulverized hot. *e* 5% 10th following month. *j* 5¼ x 8 x 12. *h* F.o.b. trucks, job site N.Y.C. *i* F.o.b. warehouse only. *j* Truck load or over. *k* $1.00 discount. *l* Red face. *m* Per bbl., 180 lb. *n* 7½ x 7½ x 12. Speed tile. *o* F.o.b. Buffalo. *p* Truck lots. *q* Provincial and Municipal tax extra. *r* Not used because of earthquake danger. *s* 2% discount for cash. *t* 5½ x 8 x 11½. *u* Tax exempt. *v* Sand lime. *w* 5 x 8 x 12. *y* Stacked. *z* Pebble lime price per 80 lb. sack. *aa* Price per sack. Lime not sold per ton. *bb* LCL. *cc* Truck delivery. *dd* 6 x 12 x 12. *ee* Pebble lime. *ff* 80% common. *gg* Select. *hh* LCL.

PAINT, ROOFING—F.O.B. CARLOAD LOTS

	RED LEAD Per 100 lb. in 600-lb. (Approx.) bbl.	WHITE LEAD Per 100 lb. in 100 lb cases	READY-MIXED PAINT Per gal., drums			ROOFING SUPPLIES Carload lots f.o.b. factory			
	Dry *a*	In oil *w*	Graphite *b*	Aluminum *c*	Ferric Oxide *d*	Rolls, slate surfaced, 85-90 lb per sq.	Asphalt felt, per 100 lb.	Tar felt, per 100 lb.	Asphalt coating per gal.	Tar pitch 360 lb. bbl. per ton
Atlanta	$18.50	$28.775	$1.75	$2.70	$1.65	$2.06‡	$2.06‡	$2.06‡	$1.00‡	$36.00‡
Baltimore	18.25	28.40	2.25	3.50	2.75	2.96	2.56	2.56	.55	36.00
Birmingham	18.50	28.775	4.40	4.52	....	3.05	3.00	3.00	.48	42.00*ee*
Boston	18.25	28.40	....	....	....	....	....	2.75‡*q*	....	34.00
Chicago	18.25	28.40	....	....	....	2.34‡*u*	2.54‡*o*	2.54‡*o*	34.00‡*bbe*	37.00‡
Cincinnati	18.25	28.40	....	3.03	....	2.44‡	2.54‡*o*	3.50‡*o*	.35*y*‡	42.00‡
Cleveland	18.25	28.40	2.50	2.75*t*	2.35	2.44	2.54*o*	2.54*o*	.32*y*	38.00
Dallas	18.50	29.15	....	4.05	....	3.50*q*	3.75*q*	4.35*q*	.36	46.00
Denver	18.75	28.90	2.88	4.38	2.63	3.20*o*	3.13*o*	2.54*o*	.41*ff*	40.00
Detroit	18.25	28.40	2.50/2.60	3.35	2.50/2.60	2.32	2.41	2.41	....	35.00
Kansas City	18.25	28.52	2.40*y*	3.35*y*	....	....	....	2.50	.315*y*	.....
Los Angeles	18.25	28.65	2.80	3.75	3.50	2.41	1.91*e*	*l*	45	*l*
Minneapolis	18.25	28.525	....	....	....	2.32*vdd*	2.41*hdd*	2.41*hdd*	.336*idd*	35.00*rdd*
Montreal	.....	25.65	3.25*t*	4.20*t*	3.62*t*	3.25*t*	3.00*tf*	3.00*tf*	.85*t*	2.60*kt*
New York	18.25	28.40	3.45*y*	....	3.45*y*	2.32	2.41*o*	2.41*o*	.34*s*	35.00
Philadelphia	18.25	28.40	3.25	3.65	3.15	2.54	2.94	2.94	.37	26.00
Pittsburgh	18.25	28.40	2.00	2.00	1.90	3.00	3.10*o*	3.10*o*	.37	38.00
St. Louis	18.25	28.40	....	....	....	2.223	2.413*h*	2.413*h*	.36	36.00
San Francisco	18.25	28.65	1.80	2.75*n*	1.35	2.27	3.30*aa*	....	.38*g*	.....
Seattle	18.25	28.90	2.95*m*	2.95*m*	....	3.23*mqcc*	3.24*hmcc*	....	.49*mcc*	48.25*jmcc*

‡ Delivered. Note: Red lead in oil 50c higher than white lead in oil. *a* Red lead prices change frequently due to pig lead price changes. *b* U. S. War Dept. Spec. 3-49A *c* ASTM Spec. D266-31. *d* 80% minimum ferric oxide. *e* 15 lb. *f* Per 432 sq. ft. *g* 55 gal. drums. *h* Per oil. 65 lb. *i* Net carload lot prices; Minneapolis and vicinity. *j* Asphalt pitch. *k* Per cwt. *l* Not used. *m* 1% discount for cash. *n* May, 1941 price. *o* Per 60-lb. roll. *q* Per 90-lb. roll. *r* F.o.b. factory Chicago. *s* ASTM Spec. D226-41. *t* Federal tax included. *u* Per 100 lb. square. *v* Per ton. *w* Price to large paint contractors is $1.25 less. *z* Mineral surfaced. *y* 55-gallon container. *z* Drums. *aa* Approximate cost per 100 lbs. *bb* Roofers coating and cement. Price per ton. *cc* LCL, truck delivery. *dd* 2% cash discount. *ee* Asphalt, in 100 lb. package. *ff* 5-gal. drums.

SKILLED AND COMMON WAGE RATES—PER HOUR

	Bricklayers	Carpenters	Struct. Iron Workers	Hoisting Engineers	Plasterers	Electrical Workers	Steamfitters	Common Labor—Building	Common Labor—Heavy Const.
Atlanta	$2.50	$1.775	$2.00	$2.00	$2.00	$2.00	$2.00	$0.85	$0.95
Baltimore	3.00	2.25	2.65	2.40/2.60	2.25	2.25	2.25	1.25	1.25
Birmingham	2.50	1.95	2.15	1.75	2.20	2.25	2.25	1.00	1.10
Boston	2.625	2.25	2.40	2.60	2.70	2.50	2.45	1.65	1.65
Chicago	2.55	2.45	2.50	2.45	2.55	2.525	2.35	1.80	1.80
Cincinnati	2.575	2.20	2.425	1.675/2.25	2.375	2.45	2.40	1.535	1.46
Cleveland	2.575	2.525*	2.575	2.525	2.525	2.525	2.375	1.85	1.725
Dallas	2.50	2.125	2.25	2.25	2.50	2.375	2.375	1.075	1.275
Denver	2.25	2.10	2.00	2.15	2.50	2.41	2.40	1.40	1.35
Detroit	2.625	2.325	2.575	2.575	2.625	2.60	2.50	1.675	1.675
Kansas City	2.60	2.15	2.30	2.375	2.75	2.30	2.375	1.575	1.575
Los Angeles	2.625	2.12	2.38	2.07	3.125*a*	2.50	2.50	1.57	1.57
Minneapolis	2.25	2.05	2.175	2.00	2.35	2.21	2.25	1.45	1.45
New Orleans	2.50	1.875	2.25	2.125	2.00	2.30	2.25	1.025	1.025
New York	3.20*b*	2.756	3.00	3.00	3.20*a*	3.00*b*	2.756	1.70	1.70
Philadelphia	3.00	2.34/2.40	2.65	2.50	3.00	2.75/3.00	2.75	1.375	1.675
Pittsburgh	3.00	2.50	2.50	2.65	2.625	2.575	2.50	1.50	1.50
St. Louis	2.75	2.45	2.50	2.55	2.50	2.50	2.50	1.50	1.40/1.75
San Francisco	2.8125	2.16	2.40	2.125	2.8125	2.50	2.375	1.55	1.55
Seattle	3.00	2.195	2.395	2.33	2.495	2.395	2.50	1.795	1.83
Montreal*	1.40	1.25	1.30	1.20	1.40	1.35	1.15	.90	.80

a 6 hr. day. *b* 7 hr. day. * Cost of living bonus now included in basic wage. - Includes 5c per hr. tool replacement.

MEXICO CITY PRICES

In Pesos, F.o.b. City		June '49	July '49
Common Wages—Building (8 hr. day)	av. per hr.	.57	.57
Common Wages—Heavy Const. (8 hr. day)	av. per hr.	.75	.75
Skilled Labor Wages			
Carpenters (8 hr. day)	av. per hr.	1.25	1.25
Bricklayers (8 hr. day)	av. per hr.	1.25	1.25
Struct. Iron Workers (8 hr. day)	av. per hr.	1.50	1.50
Struct. Steel Shapes 3"-15" x 12 meters	per ton	1,000.00	1,050.00
Reinf. Steel, Corr. Rods			
⅜" x 12 meters	per ton	1,200.00	1,150.00
½" x 12 meters	per ton	1,100.00	1,130.00
⅝" x 12 meters	per ton	1,100.00	1,120.00
¾" x 12 meters	per ton	1,100.00	1,110.00
⅞" x 12 meters	per ton	1,100.00	1,110.00
1" x 12 meters	per ton	1,100.00	1,110.00
Gravel, truck load of 3½ cu. meters			
Blue Gravel	per tr. load	30.00	30.00
Rose Gravel	per tr. load	32.00	32.00
Cement, Std. Port. (Tolteca)	per ton	120.00	115.00
Lumber			
Mex. Sacred Fir (Oyamel)	per M ft.	375.00	375.00
1st Class Pine	per M ft.	750.00	700.00
2nd Class Pine	per M ft.	450.00	400.00

ENR Skilled Average: (Bricklayers, Carpenters, Ironworkers) $2.434. **ENR Common Average:** $1.470.

ESCO ORANGE PEEL BUCKET OF ALL-CAST MANGANESE STEEL

...the only one of its kind

Here's a bucket built especially for rock handling jobs where only the toughest equipment is rugged enough. It's the *ESCO* all-cast manganese steel orange peel. No other make is similarly built; no other can match its day-after-day performance.

Manganese Steel for Durability and Lighter Weight

All parts of the *ESCO* orange peel bucket are cast of this wear- and shock-resisting steel that gets harder and tougher with use. Parts need not be cast excessively heavy to allow for wear; so the *ESCO* orange peel is lighter and less expensive than other makes designed for handling rock. Strains are distributed evenly throughout, with ample reinforcing where shock is greatest.

Power for Unfailing Grip

Through closing mechanism and lever arrangements, power is applied through three live jaws, creating a bulldog grip on any object, no matter how rough or irregular.

Adjustable for Different Jobs

For imbedded rock the closing rope is reeved for a 5- or 6-part line, reducing closing speed and increasing closing power. For loose gravel, 2- or 3-part block lines are used, producing faster closing speed and less closing power.

A Size for Your Needs

ESCO orange peel buckets are made in five sizes: ⅝, ¾, 1½, 2, and 3½ yards. For full particulars, consult the *ESCO* representative nearest you, or ask for catalog. Electric Steel Foundry, 2167 N.W. 25th Ave., Portland 10, Oregon; 716 Porter Street, Danville, Illinois. Offices in Eugene, Oregon; Chicago; Honolulu; Houston; Los Angeles; New York City; San Francisco; Seattle and Spokane. In Canada, *ESCO* Limited, Vancouver, B.C.

Loading rock with ESCO 2-yard Orange Peel bucket. (Weight 9675 lbs.)

ESCO DRAGLINE DIPPER, ORANGE PEEL BUCKETS

ELECTRIC STEEL FOUNDRY
2167 N.W. 25th Ave., Portland 10, Oregon

Please send Orange Peel Catalog number 115 to:

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Address_____

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Zone_____ State_____

MUNICIPAL AFFAIRS

New York City Housing

N. Y. State Housing Commissioner Herman T. Stichman has approved an application by the N. Y. City Housing Authority for state financing of two low-rent housing projects. One will provide homes for 400 low income families, the other the clearance of substandard housing in the Flushing area of the Borough of Queens.

This will be the second state-financed low rent housing development in that borough. The first, Astoria Houses, is well along in construction, with 480 of its 1,104 apartments completed and occupied.

The state will lend about $5,300,000 for construction of the new Flushing project and will pay cash subsidies up to $185,000 annually to help keep the rents low. Present estimates indicate that the rent per room per month will be $8.99, including heat, light and cooking gas.

On July 26 bids on $50,300,000 to finance five city-aided housing projects being built under Mayor O'Dwyer's program of housing without cash subsidy have just been taken by the N. Y. City Housing Authority. The projects to be financed and the amount of the issue in each case are: Boulevard Houses, $14,570,000; Lexington Houses, $4,715,000; Marble Hill Houses, $19,000,000; Arverne Houses, $5,300,000; and Berry Houses, $6,715,000.

With the approval of Pomonok Houses last week by the Board of Estimate, the last of the 21 housing projects being built under Mayor O'Dwyer's program of public housing without cash subsidy will get under way.

New York City Housing Authority Chairman Thomas F. Farrell announced that the project will be ready for construction to start early next year.

Pomonok Houses will be on a part of the Pomonok Country Club on Kissena Boulevard in Queens. It is expected to have about 1,380 apartments. Its rents will be set to cover all operating costs and debt service, about $17.50 per room. Like other projects in this program, it will be financed with funds raised through the sale of Housing Authority Bonds, guaranteed by the City of New York.

The program of housing without cash subsidy started in the fall of 1947 when six projects were authorized by the Board of Estimate. In the spring of 1948, fifteen additional projects were authorized. The bulk of the program is now in construction, with one project, Woodside Houses, already open, and six others to open by early fall. This program has been largely responsible for the record of 22 projects with 23,472 apartments started in the last twelve months; all but four projects are the city's.

Buffalo Skyway Proposed

At Buffalo, N. Y., a gigantic skyway, beginning at the south end of the proposed high-level bridge over the waterfront, and extending through Lackawanna beyond the congested area, has been proposed to the common council.

Called the "Gateway to the West," the proposal was submitted in a communication to the council by the Western New York Civic Progress Association composed of leaders of civic, business, professional and labor organizations.

Besides calling for immediate council action on the skyway project, the association requested simultaneous action on proposed plans for development of the waterfront for recreational and park purposes.

At the same time, Welles V. Moot, chairman of the City Planning Commission, informed the council in a separate communication that the skyway proposal "deserves careful professional study."

With the new $10,000,000 high level bridge across Buffalo River an assured project, Buffalo now has an opportunity to create a beautiful lake front, the Civic Progress Association pointed out.

"Reasons of economy, traffic efficiency and safety, park and beach development and military defense demand the extension of the $10,000,000 high level bridge into the skyway . . ." the association said.

Fretts & Senior of Buffalo have been awarded a contract by New York State to draft preliminary surveys and maps of the Niagara Thruway route. Work is scheduled for completion in seven months.

Allegheny Co. Sewerage

It is now announced that the city of Pittsburgh has made available to the Allegheny County Sanitary Authority funds sufficient to prepare detailed construction plans and specifications for a sewage treatment system for Pittsburgh and 59, instead of 44 other municipalities as originally planned. The seven zones will be: Pittsburgh, McKeesport, Elizabeth, New Kensington, Oakmont, Sewickley, and Squaw Run. The total project will cost about $47,200,000.

New Building Codes

Among the many cities considering new or revised building codes are Louisville, Ky., and Milwaukee, Wis.

At Louisville it is expected that very soon the city will adopt a new code based on that of the National Board of Fire Underwriters. Maj. Harold Foster, chief of the fire prevention bureau, says that about 10 percent of present buildings—$6,000,000 worth—will not measure up to the standards of the new code.

The Milwaukee common council will be asked to hire an expert outside agency to study the city's proposed new building code and make recommendations for changes and additions which will benefit the general public.

TWO-LEVEL ROADWAY is Chicago's answer for traffic congestion at Congress Street and Wacker Drive. The super highway is due for completion next year. Here, excavation begins for the lower level. (Wide World Photo)

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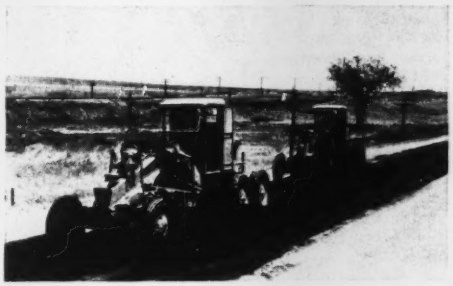

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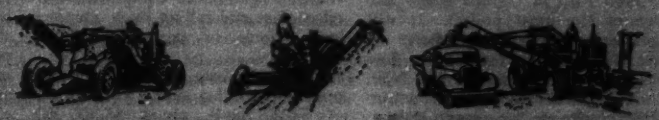

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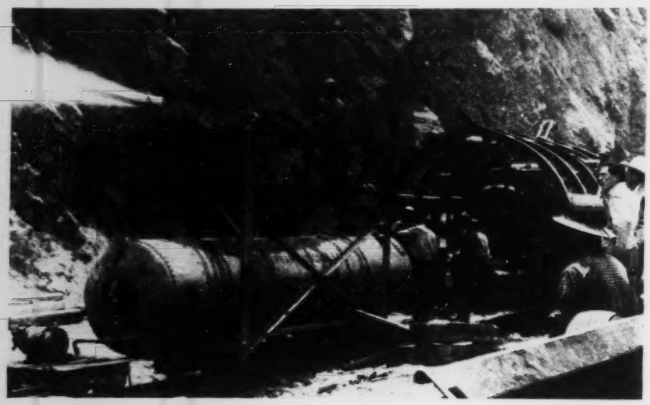
DEVELOPMENTS ABROAD



TESTING THE GUN which applied 1 cu. yd. of concrete every 10 seconds in the 10-in. lining of the Lerma tunnel, part of a 34-mi. aqueduct that will bring 137 m.g.d. of water from across the Continental Divide to augment Mexico City's present 215 m.g.d. supply. The lining of the 9-mi. tunnel required 130,000 cu. yd. of concrete. Four power plants along the aqueduct will have a capacity of 12,650 kw.

Nile River Development

Egypt—Agreement between the British and Egyptian governments for the construction of a dam at Owen Falls in Uganda for the production of hydro-electric power and the control of the Nile waters, announced by Mr. Bevin in the House of Commons recently, represents an important step towards the execution of a vast scheme for further development of the Nile River.

The scheme has been compared with the Tennessee Valley Authority's developments in this country. Great works have already been undertaken and carried out in the Nile valley, but the Owen Falls project will result in harnessing the Nile on such a scale as to make possible greater developments than have ever taken place before. International cooperation is making it possible. Eventually, it will result in the distribution to millions of people of real wealth in the form of food, power, minerals and services.

The dam across the White Nile at Owen Falls in Uganda is the first stage of the great project. It will regulate the level and discharge of Lake Victoria, and control the flow along the whole course of the Nile. It will be combined in one structure with a hydro-electric power station. This is the part of the project which has been the subject of the present agreement by the United Kingdom and Egyptian governments.

Extensive surveys have been made by C. R. Westlake and others. The Uganda legislative council has accepted Mr. Westlake's report and recommendations, and last year the government received a favorable report from Sir Alexander Gibb and Partners and Kennedy and Donkin. Last February the Egyptian government approved the scheme and agreed to participate in it, voting $18,000,000 toward the cost of the dam and hydro-electric works. Uganda will contribute $30,000,000 as a preliminary payment.

ECA helps Fiat Co.

Italy—Approval of the first step in an extensive program of modernization and rehabilitation of the mechanical and engineering sector of the Fiat Co., in Torino, has been announced by the Economic Cooperation Administration in Washington and Rome.

The Fiat Co., widely known as a manufacturer of automobiles, also produces buses and other commercial vehicles, agricultural equipment, diesel engines and rolling stock, employing a force in excess of 55,000 workers.

The first phase of the company's program calls for about $14,000,000 of ECA funds, about $5,800,000 from the Export-Import Bank, and the equivalent of about $14,000,000 in Italian lire from the company's own resources. Most of the ECA funds will be used in improving the automobile division, but assistance funds are also provided for the agricultural equipment, diesel engine, railway rolling stock, heavy castings, and enlargement for several smaller divisions.

Equipment and machine tools to be purchased in the United States with ECA funds include foundry machinery, forging presses, sheet processing presses, lathes, and welding, milling, tapping, threading, drilling, grinding, boring, sharpening, and gear machines.

India—Nine irrigation countries have accepted India's invitation to join an international commission of irrigation and canals, with headquarters in India. They are Brazil, Canada, Ceylon, Egypt, Indonesia, Pakistan, Siam, Switzerland and Turkey. More replies are expected.

The Commission's main function will be to encourage the study of design, construction, maintenance and operation of large and small irrigation works and canals.

First plenary session is proposed for India early in 1951, when three other international bodies are to meet. These are an international commission on large dams, a world power conference, and an international conference on hydraulic structure research.

Brazil—The Export-Import Bank, Washington, is giving active consideration to the Companhia Siderurgica Nacional (the National Steel Company) of Brazil's request for an additional loan for enlargement of their steel plant at Volta Redonda. Completed in 1946, the plant's design epitomizes the most advanced United States practice. It is equipped entirely with U. S. machinery, largely supplied by proceeds of Export-Import Bank loans totalling about $45 million. American consultants have been active in advising and training Brazilian employes.

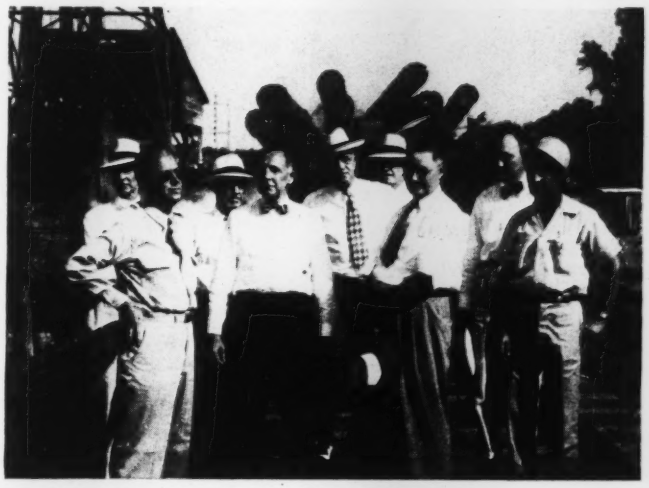
Puerto Rico—The U. S. Navy is offering its $7,500,000 dry dock and ship repair facility at the Naval Station at Isla Grande for lease. Ship construction experts say the facility meets the requirements of a modern shipyard. It has deepwater approaches, numerous piers, dry dock mobile cranes and adequate shops and administration buildings. It could easily become the only complete dry docking and repair unit in the Carribean. Decision to lease the property was made in part as a move to help Puerto Rican industrialization.

MEN AND JOBS

Clarence R. Andrew, after 32 years with the Corps of Engineers, U. S. Army, has retired as civilian engineering consultant of the Chicago district engineer office. He took his C.E. degree at Norwich University, Northfield, Vt., in 1906, and immediately joined the corps as an inspector on Ohio River Lock construction. During the first world war he captained Co. D, 32d Engineers, serving a year in France.

Prof. George E. Barnes of Case Institute of Technology has been appointed consulting engineer to Parsons, Brinckerhoff, Hall and MacDonald of New York, associated with Damon, Dinerman & Cia S. A. of Buenos Aires to advise the Argentinian government on hydroelectric projects for the Salado and Juramento rivers. Head of the department of civil engineering and engineering mechanics at Case, Professor Barnes in 1934–5 was consulting engineer for the U. S. Engineer Department on the $40,000,000 Muskingum watershed project.

Reserve officers who staff the newly activated 915th Engineer Aviation Group affiliated with the Arizona Chapter of the Associated General Contractors, from left to right, are: Lt. Col. George E. Tank, executive officer, Col. George W. Howard, commanding officer, Lt. Col. Waldo D. Freeman, operations officer, and Maj. J. H. Sonntag, adjutant.



A recent inspection party on flood-control, and river and harbor projects in Louisiana included, left to right: Geo. Hudson, chief, Engineering Division, New Orelans District, Corps of Engineers; Brig. Gen. P. A. Feringa, president, Mississippi River Commission; F. R. Naylor, principal assistant engineer, Texas and Pacific Ry. Co.; Charles G. Warner, engineer, Bureau of the Budget; Col. J. Lester White, director of public works, Louisiana; DeWitt L. Pyburn, member, Mississippi River Commission; R. J. Gammie, chief engineer, T. & P. Ry. Co.; Leo M. Odom, consulting engineer, T. & P. Ry. Co.; and J. H. Payne, general superintendent, Brown & Root Construction Co., Houston, Tex., contractors for the construction of the T. & P. mainline, high-level crossing over the Morganza Floodway.

P. A. Roberts, consulting engineer for Lumberton, N. C., since 1935, has been named assistant city manager of Gastonia, N. C. A graduate of North Carolina State College School of Engineering, he has held engineering posts at Badin, N. C., Durham, N. C., Baton Rouge, La., and Norfolk, Va.

R. H. Zeigler, formerly supervising engineer for the urban expressway project at San Antonio, has been assigned by the Texas Highway Department as senior resident engineer at Kerrville. He succeeds **Charles T. Holmes**, who was transferred to San Antonio as assistant district engineer. Ziegler, graduate of the University of Colorado, has been with the Texas Highway Department more than 20 years and formerly was engineer for the Del Rio district.

Carl M. Berry, civil and photogrammetric engineer, has opened offices in Seattle, Wash., in the Jones Building and in Tacoma in the Rust Building. After studying logging and civil engineering at the University of Washington, he spent 12 years with the Weyerhaueser Timber Co., two years with the Coast & Geodetic Survey, five years with the Bureau of Reclamation and eleven years with the Bonneville Power Administration.

E. T. Roetman, chairman of the research committee of the Interstate Commission on the Potomac River Basin, has resigned as sanitary engineer with the American Viscose Co. to become engineer with the Federal Security Agency in Dallas, Tex.

J. E. Belliveau has been appointed deputy minister of highways and public works in Nova Scotia. **J. L. Wickwire** succeeds him as chief engineer, and **Gordon S. Stairs** is assistant chief engineer.

Wayne S. Byrne, construction engineer on Bonny Dam, St. Francis, Kan., has been transferred to the office of the chief engineer, Denver, Colo. He will be technical supervisor of construction in Region 7 of the Bureau of Reclamation. His successor at Bonny Dam is **C. L. Mutch**, formerly at Medicine Creek Dam, Cambridge, Neb.

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ONE MACHINE — 6 BIG JOBS! One man, "quick change" attachments include concrete hopper; scoops in five sizes; lift fork; buck rake; crane boom; track extensions to total of 26 feet. (attachments interchangeable with those on Model "C" Scoop with Planetary Drive).

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Top: Fast, Easy Loading. Bottom: Hauling Form.

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HEINER EQUIP. & SUPPLY CO...Salt Lake City, Utah
INTERMOUNTAIN EQUIPMENT CO.....Boise, Idaho
LIVELY EQUIPMENT CO.....Albuquerque, N.M.
MACK TRUCK SALES.....Reno, Nev.
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BOEHCK ENGINEERING CO., INC....Houston, Texas
J. D. EVANS EQUIPMENT CO.....Rapid City, S.D.
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MINNEAPOLIS EQUIPMENT CO..Minneapolis, Minn.
MYHRA EQUIPMENT CO.....Fargo, N.D.
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STANDARD EQUIPMENT & SUPPLY CO.
North Little Rock, Ark.
STEPHENS-JONES, INC.....Des Moines, Ia.
BELL, HORTON M.....Columbus, Ohio
BEMISS EQUIPMENT CO.....Richmond, Va.
BODE-FINN CO.....Cincinnati, Ohio
ADVANCE CONTRACTORS SUPPLY CO...Chicago, Ill.
CONTRACTORS MACHINERY CO.....Detroit, Mich.
CONTRACTORS MACH'Y CO....Grand Rapids, Mich.
CONTRACTORS SERVICE, INC.....Charlotte, N.C.
DRYDEN SUPPLY CO.....Dryden, N.Y.
FURNIVAL MACHINERY CO.....Philadelphia, Pa.
H. R. HAMISS, INC.....Charleston, West Va.
E. W. HARMON CO.....Columbus, Ohio
HAWKINS EQUIPMENT CO.....Memphis, Tenn.
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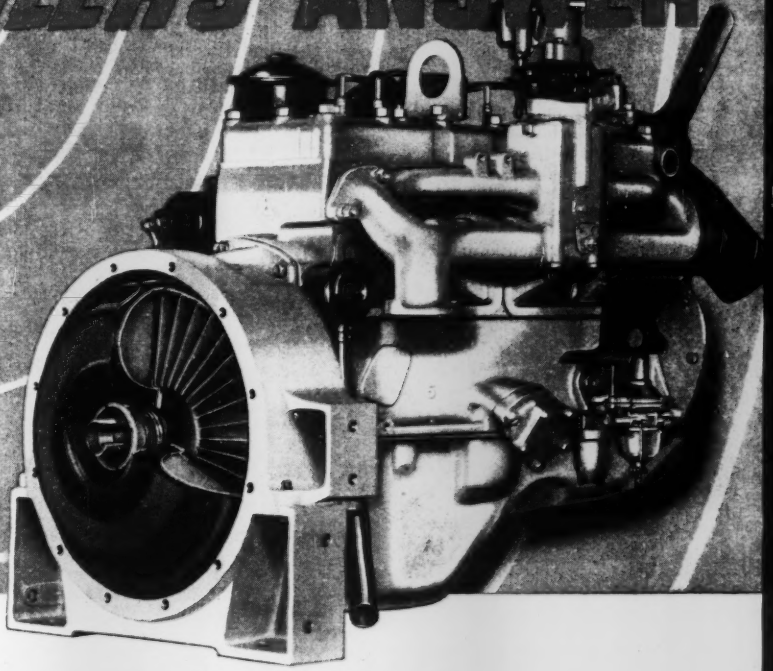

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University of Technology

The New South Wales University of Technology has been established recently at Sydney, Australia. Acting Director A. Denning says the aim is to provide engineering education similar to that of the leading American institutes of technology. Considerable progress has been made under the guidance of a development council appointed in August, 1947, by R. J. Heffron, Minister for Education.

The erection of the first university building is now being undertaken on an area of land at Kensington reserved for university purposes. Applications have also been invited both in Australia and overseas in connection with the appointment of professors to occupy eight foundation chairs at the University of Technology. It has been specified that these officers should not only be distinguished academically, but should also have an excellent background of industrial research.

On March 1, 1948, professional degree courses of four years' duration were established in Civil, Electrical, Mechanical, and Mining Engineering. These undergraduate courses are of a type unique in Australia. They are spread over four years and have been organized on a system requiring approximately half the year, from March to September, full-time day attendance at the University of Technology, and practical experience of a planned nature in industry for the remainder of the year.

New Courses

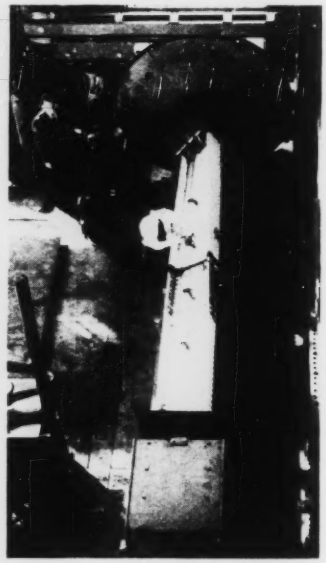
A new type of postgraduate program for training experts in industrial health has been announced by the Harvard University School of Public Health. The program will start in September with courses in planning, organizing and directing the health efforts of industrial companies, whole industries and groups of companies and employees.

J. S. Simmons, dean of the school, says that the program was organized to meet the increasing demand on the part of both management and labor for more effective methods of conserving the health and efficiency of industrial workers.

It has been demonstrated, Dr. Simmons said, that well-organized health programs pay measurable dividends through the reduction of absenteeism, the prevention of accidents, control of occupational hazards, decrease in labor turnover, improvement of morale, and increased worker productivity.

The new program will be under the direction of the Department of Industrial Hygiene of the School of Public Health. The related teaching and research facilities of Harvard University including certain special facilities at the Massachusetts Institute of Technology and other cooperating institutions, will be available to supplement the instruction. Professor Philip Drinker is head of the Department.

Successful candidates will be awarded the newly established degree of Master of Industrial Health. The courses will be open to all qualified physicians but preference will be given to individuals who have had experience in industrial medicine, and who wish to broaden their effectiveness by postgraduate training in the field of industrial health.



TORSIONAL BEHAVIOR of structural members, such as plate and box girders, will be studied by means of this 2,000,000-lb.-in. torsion testing machine at the Fritz Engineering Laboratory of the civil engineering department of Lehigh University. The machine is capable of handling full-sized bridge sections, twisting them through any desired angle. It is expected to provide needed information concerning the torsional strength of riveted and welded built-up girders. This is important in the critical period of initial erection of railroad girder bridges. The picture above shows Director Bruce G. Johnston at the controls and Research Assistant Fu-Kuei Chang taking a reading with a level bar.

The Institute of Technology, University of Minnesota, has announced a two-year course in engineering drafting. This is a 6-quarter, 96-credit program consisting of engineering drafting, applied descriptive geometry, structural detailing, architectural drawing, and applied mathematics. The engineering and architectural firms of St. Paul and Minneapolis have been desiring some such course in order to meet the increased demand for skilled draftsmen. The course will be open to women.

During the fall semester the evening courses in architecture at Columbia University are offering work in basic and advanced estimating. The basic course includes plan reading, the reading of symbols and material determination, quantitative surveys by materials and trades, cost keeping in field and office, professional short cuts, and limits of accuracy. The advanced course includes the development of a system of estimating and its application to various types of building operations, pricing of work, subcontracts, professional methods, short cuts, limits of accuracy and comparative economies of various materials and structural systems.

Educational Notes

Civil and mechanical engineering facilities of the California Institute of Technology will be consolidated in a new $625,000 laboratory to be built at Pasadena. Contract for the construction, which will be completed in about a year, has been awarded to Ray Gerhart, Pasadena. The new building, with two floors beneath and three above the ground, will occupy 34,000 sq. ft. of floor space. All designs and drawings were done by the Caltech Buildings and Grounds Department under Wesley Hertenstein, superintendent, in collaboration with the engineering division.

The Ernest B. Ellis Foundation, valued at about $50,000 is now ready to help engineering students from Fayette County, Ky. to study at the University of Kentucky.

A chapter of Chi Epsilon, national honorary engineering fraternity, has been installed recently at the Polytechnic Institute of Brooklyn.

The American Society for Engineering Education is making special efforts

(Continued on page 56)

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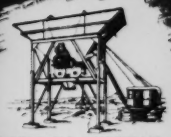

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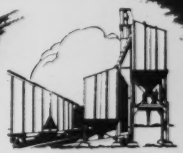

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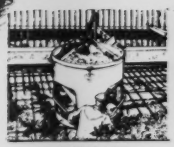
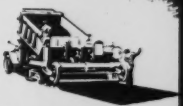


CONCRETE BUCKETS



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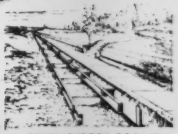

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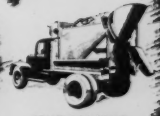

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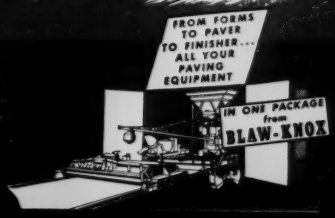

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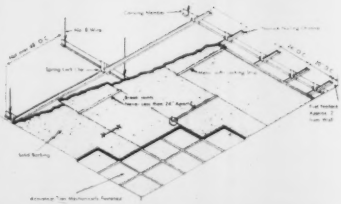

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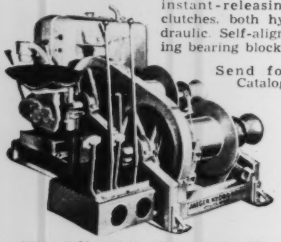

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All graduates of the latest class in the civil engineering department of the South Dakota State College have obtained positions, and many undergraduates received offers for summer work. Emory E. Johnson, head of the department, says the demand for civil engineers in that state will remain high because of many highway, river development and other public works.

The training of a generation of engineers in Israel is of vital importance to that new state, according to Alfred M. Freudenthal, professor of civil engineering at Technicon, the Hebrew Institute of Technology at Haifa, who is visiting professor at the college of engineering, Columbia University.

The election of nine institutions to active membership in the Engineering College Research Council of the American Society for Engineering Education has been announced by Dean F. M. Dawson of the State University of Iowa, chairman of the Research Council. Accepted into membership are the University of California (Los Angeles), Catholic University of America, University of Arkansas, University of Denver, Montana School of Mines, Northeastern University, University of Notre Dame, Tufts College, and Wayne University. Each has qualified for membership by virtue of the extent and quality of the engineering research conducted at the institution.

Recently authorized to grant the degree of Bachelor of Science in Engineering are these four institutions in California's state college system: California Polytechnic College, San Diego State, Fresno State and San Jose State.

A total of 1,897 students enrolled in the summer session at Illinois Institute of Technology. Ninety-nine graduates also registered for summer study. Late registration is expected to bring the enrollment above 2,000.

OBITUARY

Sanford H. Fleming, 91, retired civil engineer, died at Ottawa, Ont., July 17. He was the last surviving son of Sir Sandford Fleming, former chief engineer of the Canadian Pacific Railway. He was associated with his father during the survey of the CPR's transcontinental line in the 1880's. Later as a consulting civil engineer his headquarters were in Ottawa. Some of the engineering works on which he was engaged included the CPR bridge over the St. Lawrence River at Ville La Salle, Que., (then Lachine), and the Inner Waterway Canal from Jacksonville to West Palm Beach, Fla.

Pasquale J. Mongillo, 66, Wilmington, Del., contractor for 40 years, died on July 24. He specialized in cement work, and much of the sidewalk and other cement construction in Wilmington was done by his company.

Benjamin Wolhaupter, 90, a civil engineer and inventor, died at Silvermine, Conn., July 20. He had invented several types of safety devices for railroad tracks. When the railroads began colonizing the Midwest in the grain and mining areas after the Civil War, Mr. Wolhaupter was drawn by his interest in railroading to that section of the country. During the era of expansion and until 1915 he worked for the Grand Trunk system, later taken over by the Canadian National Railways.

James A. Kelley, Sr., 81, retired civil engineer, died July 23 in Washington, D. C. He was a resident engineer in Washington during the building of the Washington, Baltimore and Annapolis Electric Railway from 1905 to 1907. Later he supervised construction work for the Delaware and Hudson Railway in New York state, and during World War I served with the Army. He returned to Washington, D. C., about 1924 and worked as an engineer with the District Engineer Department until his retirement 10 years ago. As a young man, Mr. Kelley was a construction engineer for the Union Pacific and the Chicago, Milwaukee & St. Paul Railroads.

Charles L. Hays, 62, a civil engineer for the Ontario Hydro Electric Power Commission, died at Toronto July 12. A graduate of Queens University, Kingston, Ont., he had been working on a hydro electric construction job at Mattawa, Ont., at the time of his death. He had been associated with

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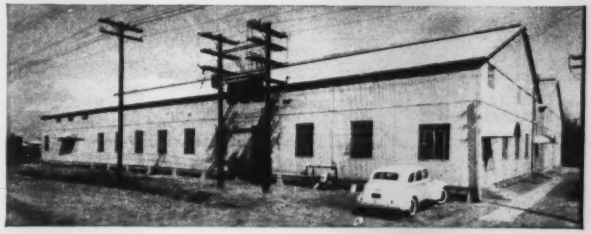

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Sheldon A. Modglin, 54, chief construction engineer for the M&K Corp., died at San Francisco recently. At the time of his death, he was in charge of work at the city's $8,000,000 sewage disposal plant. An M&K employe since 1914, he had supervised construction of many projects, including the Hoover Dam power house.

William Sharp, civil engineer with the Ontario Hydro-Electric Power Commission for the last 25 years, died in Toronto July 25. Born in Scotland, he went to Canada in 1911, and worked for some years for the Toronto Transportation Commission before joining the Ontario Hydro-Electric Power Commission.

W. B. Kiggens, 74, a pioneer in the movement to obtain Central Valley Project water for the San Joaquin Valley, died July 26 in Lindsay, Calif., less than three weeks after he pushed the button which started water rushing through the Friant-Kern Canal. He had been chosen for that honor in recognition of his continued interest in the irrigation problems of the valley for over 30 years.

MAJOR MEETINGS

New England Water Works Association. The Balsams, Dixville Notch, N. H., Sept. 13-16.

Public Works Congress and Equipment Show. Municipal Auditorium, Kansas City, Kan., Sept. 18-21.

Institute of Traffic Engineers. Wardman Park Hotel, Washington, D. C., Sept. 25-28.

Association of Western Engineers. Patterson Hotel, Bismarck, N. D., Aug. 22-25.

American Society of Civil Engineers, fall meeting, Hotel Statler, Washington, D. C., Oct. 2-5.

American Society of Planning Officials. Hotel Statler, Cleveland, Ohio, Oct. 10-12.

American Society for Testing Materials—First Pacific Area National Meeting. Fairmont Hotel, San Francisco, Calif., Oct. 10-14.

Federation of Sewage Works Associations. Hotel Statler, Boston, Mass., Oct. 17-20.

Metal Congress and Exhibition. Public Auditorium, Cleveland, Ohio, Oct. 17-21.

American Public Health Association. Hotel Statler and Hotel New Yorker, New York City, Oct. 24-28.

37th National Safety Congress. Stevens Hotel, Chicago, Oct. 24-28.

National Congress on Industrial Hydraulics. Sheraton Hotel, Chicago, Oct. 26-27.

Engineers Council for Professional Development. Edgewater Beach Hotel, Chicago, Oct. 28-29.

UNIT PRICES

Schuylkill desilting unit prices available

Engineering News-Record will send its readers the bid tabulations on four silt impounding basin jobs, part of the Schuylkill River desilting program, which is under the auspices of the Department of Forests and Waters, Commonwealth of Pennsylvania ("Pennsylvania Cleans its Worst River," ENR Mar. 10, p. 21.) The bids were taken July 7, at Harrisburg, and the contracts were awarded to the low bidder on the same day. Basins included in the contracts are Middle Abrams, Norristown, Birdsboro, and Douglassville.

James D. Morrissey, Inc., Philadelphia, was low on all four jobs, with prices as follows: Middle Abrams, $77,228; Norristown, $180,365; Birdsboro, $143,420; Douglassville, $113,394. There were three bids on all but Norristown, on which there were two.

Work includes excavating material from within the basin areas, to form dikes around the areas, and building reinforced concrete waste weirs. All four contracts will run for 100 days. Rail and highway transportation available.

East Delaware Tunnel Awarded to Walsh-Perini

The final link in New York City's great Delaware Water Supply project is 25-mi. East Delaware Tunnel, which was awarded July 27 to Walsh Construction Co. and B. Perini and Sons, Inc., New York. The project connects the reservoirs of Downsville and Merriman dams, ("Building a Trio of Earthfill Dams," ENR Jan. 6, 1949, p. 60). It was split up into four contracts by the New York Board of Water Supply.

Walsh-Perini were low on all four contracts, with bids totaling $44,224,577.11, including a total deduction of $902,542.39 conditional upon the award of all four contracts. The bid was 12 percent below the engineer's estimate. Six other contractors bid on all or part of the work, the high combination from one contractor being $60,938,200. Over-all project time is 63 months.

Beginning at the intake chamber, (also part of the work) 3¼ miles upreservoir from Downsville Dam, the tunnel runs in a southeasterly direction, with 11 ft. 4 in. concrete-lined inside diameter throughout most of its 25-mile location. The tunnel emerges through a 520-ft. section, with finished diameter 9 ft. 6 in., into Rondout Reservoir about six miles above Merriman dam. The terminal contracts will be worked from the portals, and the interior contract will be worked, each on two headings, from shafts that are at the intersections of tunnel tangents.

Because items generally are comparable in the four contracts, the tabulation offered by ENGINEERING NEWS-RECORD sets quantities and Walsh-Perini prices on each contract, opposite the names of the items. For instance, a line in the tabulation will read, "Dry packing: 1,800 cy., $5.00 (first contract); 4,000 cy., $5.00 (second contract); 4,000 cy., $12.00 (third contract); 2,000 cy., $5.00 (fourth contract). In some cases the second bids also are given.

Job description also cites wage rates, nearness to railroads and other conditions.

Water and sewer lines for Detroit Dam housing

Minnis and Shilling, Eugene, Ore., were the low bidders on each of four parts of a U. S. Engineer contract for facilities in the permanent housing area near Detroit damsite, on the North Santiam River, 15 miles east of Mill City, Oregon. Bids were taken July 19.

Engineering News-Record will send bid tabulations on one part of the work (Part B), which includes excavation for a sewer and water system, a 60,000-gal. steel water tank, a pumping station, installing government-furnished water pipe, and furnishing and installing all sewer piping, drain tile and fittings.

On Part B, four bids were received, ranging from Minnis and Shilling's $26,070 to $42,258. The engineer's estimate was $26,322. Water pipe items include 2,910 ft. of 8-in. steel pipe with victaulic couplings. There are 460 ft. of sewer and drain pipe in the job. Contract time 200 calendar days. Wage range from $1.00 to $1.40.

Unit price reports on jobs cited in these columns will be mailed to readers of Engineering News-Record on request at no charge. Address: Manager, Business News Dept., Engineering News-Record, 330 W. 42nd St., New York 18, N. Y. Identify by quoting headline as used herewith, and be sure to give full mailing address.

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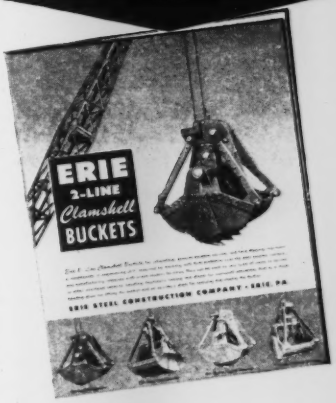

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CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

ELSIE EAVES, Manager — *J. A. MAHONEY, Reports* — *M. R. ROESSLER, Statistics*

WATER SUPPLY

BIDS ASKED

August 22

Ia., Geneva—City, City Hall, WW sys $30,000. R. W. Gearhart, 349 21 St. S. E., Cedar Rapids, engr.

August 23

California—State Div. Architecture, P. Wks. Bldg., Sacramento, water supply sys. imprvs. at David L. Bliss State Park, El Dorado Co. Anson Boyd, Sacramento, state archt.

Md., Hyattsville — Washington Suburban Sanitary Comn., Hamilton St., Contr. 663-W, 11.12 mgd filtration plant unit, 2.15 mg and 2.84 mg filtered water reservoirs, Willis School Filtration Plant, Contr. 663-W. Plans deposit $10; adv. ENR 8/11.

Md., Laurel—Washington Suburban Sanitary Comn., Hamilton St., Hyattsville, filtration plant, Willis School, near here. Approx. $450,000.

LOW BIDDERS

Calif., San Francisco—Pub. Utilities Comn., City Hall, July 26, furnishing, installing valves, installing venturi meter, etc. San Joaquin Div. of Hetch Hetchy Aqueduct, Spec. 215, from United Concrete Pipe Corp., Baldwin Park, **$428,655.**

Ore., McMinnville — City, City Hall, bids July 30 postponed until spring, repair and enlarge Reservoir No. 1 and No. 2, increasing capacity from 1,000,000 to 1,700,000 gals. reincon. CD 7/8.

CONTRACTS AWARDED

Pa., Wilkinsburg — Wilkins—Penn Joint Water Auth., 712 South Ave., 200x300 ft., rein.-con. reservoir, 1 story, approx. 25x25 ft. gatehouse at Churchill Boro. to O. H. Martin Co., 18 1st St., Sharpsburg, **$711,598.** Est. $750,000. Morris Knowles, Inc., 1312 Park Bldg., Pittsburgh, engr.

SEWERS, WASTE DISPOSAL

BIDS ASKED

August 31

N. Y., Yonkers—City, City Hall, incinerator plant. Extended date. Metcalf & Eddy, 1300 Statler Bldg., Boston, Mass., engrs. CD 6/16.

LOW BIDDERS

Calif., Grass Valley—City, City Hall, July 26, sewage treatment plant, from Ke-Ston Constr. Co., Box 109, Maywood, **$351,932;** collection sys., from Stolte, Inc., 8451 San Leandro St., Oakland, **$122,632.** CD 7/7.

●**Calif., Oakland**—East Bay Municipal Utility Dist., 512 16 St., July 27, sewer outfall, land and subaqueous sections, Spec. SD-29, Schedule 1, from George C. Pollock Co., Forum Bldg., Sacramento, and Ben C. Gerwick, 112 Market St., San Francisco, **$1,687,916;** Schedule 2, from Healy-Tibbitts Constr. Co., 411 Brannan St., San Francisco, **$1,267,072.** CD 6/30.

●**Ill., Chicago**—Sanitary Dist. of Chicago, 910 S. Michigan Ave., July 28, North Shore Intercepting Sewer, Contr. incl. 29,900 lin. ft. concrete or rein.-con. pipe sewer, etc., Winnetka and Glencoe, from Santucci Constr. Co., 5040 Carol St., Skokie, **$1,731,147.** CD 7/20.

Ill., Chicago—Sanitary Dist. of Chicago, 910 S. Michigan St., July 28, Beating sys., sludge disposal bldg., incl. piping valves, etc. Div. Ub, West-Southwest Sewage Treatment Works, from Charles E. Crane Co., 1656 N. Odgen St., **$191,895.** CD 7/26.

CONTRACTS AWARDED

●**Ill., Chicago**—City of Chicago, Dpt. Purchases, Contracts & Supplies, City Hall, auxiliary outlet sewers, Roscoe St. sewerage sys., to John C. Tully Co., 33 N. LaSalle St., Zone 1, **$1,069,761.** Bids 5/9, awarded 7/22. CD 5/26, under LB.

Ia., Ottumwa—City, City Hall, sewers, to Gjellefadt Constr. Co., Forest City, **$344,531.** Bids 7/19. Henry Cook, city engr. CD 1/15/47.

N. M., Las Cruces—City, sewer and water-main extens., to P. R. Burn, Box 1111, **$200,000.** Ashley G. Classen & Assoc., 504 N. Kansas St., El Paso, Tex., engrs. and archts. CD 6/2/48.

●**N. Y., New York**—President Manhattan Boro, Municipal Bldg., Zone 7, Contr. 161-C, sewers in 1 Ave., E. 48 and E. 42 Sts., Park and Franklin D. Roosevelt Dr.; relocation city watermains, Bd. transportation power ducts, gas mains, steam mains and electric ducts of the Consolidated Edison Co. and subsidiaries electric ducts of the Empire City Subway Co. from bed of 1 Ave. between E. 40 and E. 49 Sts., etc. in connection with constructing tunnel in 1 Ave. vicinity of United Nations Site with ramp approaches, etc. between E. 40 and E. 49 Sts., to Slattery Constr. Co. & Poirer & McLane, 7202 51 Rd., Woodside, **$2,288,056.** Bids 6/9. CD 6/3.

Man., Pine Falls—Dominion Govt., Hunter Bldg., Ottawa, Ont., sewers, to Bird Constr. Co. Ltd., 708 Confederation Life Bldg., Winnipeg, **$105,322.** Dpt. P. Wks., Ottawa, Ont., engr.

●**Pa., Phila.**—Dpt. Pub. Wks., City Hall Annex, Primary settling tanks, appurtenances, Southwest Sewage Treatment Works, to Hughes-Foulkrod Co., 1505 Race St., **$1,217,304.** Bids 6/29. CD 7/25, under LB.

BRIDGES

BIDS ASKED

August 26

†**Virginia**—Bureau Pub. Roads, General Services Admin., 1440 Columbia Pike, Arlington.

Arlington Co.—construct Prof. Va. DA-WR 8, Bridge 21 Exten. Pentagon Road Network. Plans deposit $10., adv. ENR 8/11.

LOW BIDDERS

Kentucky—State Hy. Dpt., Frankfort, July 22; bridge over Straight Creek, Pineville-Jenson-Harlan Rd., ER 7 (1) SP 7-44 Bell Co., from Kentucky-Virginia Stone Co., Middlesboro **$65,974***** bridge and 0.129 mi. approaches, Davistown-Great Crossing Rd., RS (120-155) (105-194) from Strunk Constr. Co., Somerset, **$57,727***** bridge and traffic bound limestone approaches 0.08 mi, Pisgah-Mt. Vernon Shannon Rd. RS (120-175) (105-94) from Wm. M. Hooper Caneyville, **$59,653,** both Scott and Woodford Counties*** bridge over Wilson Creek, grade, drain., traffic bound river gray, 0.139 mi, Paducah-Lovelaceville-Bardwell Rd. S 186 (1) SP 20-24 Carlisle Co., from McDade & McDade, Fulton, **$74,759***** bridge and traffic bound limestone approaches 0.234 mi. Kirkmansville-Cliffty Rd., S. 71 (1) SP 116-326 Todd Co., from Lyons & Breeden, Rogersville, Tenn., **$51,584***** received no bids bridge and traffic bound limestone 0.426 mi. RS (120-155) (105-194) RS (120-175) (105-94) and RS (120-195). Total combined bid from Traylor Bros., Inc., at Mt. Vernon Rd., Evansville, Ind., substructure and 0.561 mi. approaches, over Cumberland River, Paducah-Eddyville Rd., F. 530 (4), SP 72-171, Lyon Co., **$370,181.** CD 7/8.

Louisiana—State Hy. Dpt., Baton Rouge, July 27, four 50 ft. three 75 ft. and four 50 ft. I-beam span Loggy Bayou Bridge, 0.118 mi. approaches, State Rt. 10, S. P. 10-05-08 F. A. P. F 158 (6), Bienville and Bossier Parishes, and Ninock Overpass incl. thirty-nine 40 ft. and one 80 ft. I-beam span, etc., 0311 mi. approaches, at Louisiana Arkansas Ry., Coushatta Bossier Hy., State Rt. 10 S. P. 10-05-09, F. A. Grade Crossing, Proj. FAGH (5), Bossier Parish, from Newsom Bros. & J. W. Snowden, Columbia, Miss., **$192,266** and **$334,465** respectively. CD 6/30

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum size or larger: water supply, earthwork, waterways $25,000; other public works $50,000; industrial buildings $68,000; other buildings $250,000.

Classes of Construction

(Name in order of Listing)

Water Supply	Latin America
Sewers, Waste Disposal	Public Buildings
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.;

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

† Federal Government
● Project of $1,000,000 or over.
ENR Engineering News-Record
CD Engineering News-Record Construction Daily

New Jersey—State Hy. Dpt., Trenton, July 28, Memorial Avenue overpass approaches RT. 151, Sect. 1 A, F. A. P., from A. J. Cunningham & Son, 370 Newkirk Ave., Trenton, **$246,677.** CD 7/11.

CONTRACTS AWARDED

Arkansas—State Hy. Dpt., Little Rock, concrete, steel bridge across Arkansas River at Pine Bluff, Jefferson Co., to D. F. Jones Constr. Co., Southern National Bldg., Little Rock, **$346,052.** Bids 7/29. CD 7/19.

STREETS AND ROADS

BIDS ASKED

August 19

Tex., Canton—Van Zandt Co., Leon Cox, Judge, Courthouse, 4.1 mi. gravel base, asph. surf. tr. County Road 428, Precinct 1, $65,000; 11 mi. 2 lane all weather road, County Road 242, Precinct 3, $110,000; 14 mi. clearing and grubbing, grading, removal old drainage structures, build new ones, oil base and asph. surf. tr. approx. 6¾, County Road 125, Precinct 4, $190,000. CD 3/18.

August 23

Calif., Los Angeles—Bd. Supervs. Los Angeles Co., 501 Hall of Records, imprv. 4,000 ft. Rosecrans Ave., Temple St. to Atlantic Ave. Approx. $50,000. C. E. Arnold, co. engr.

About August 25

●**N. M., Albuquerque**—U. S. Eng., P. O. Box 1538, ABC pavement and drainage, Stage III, Sandia Base, Serial No. 291-50-9, approx. 1 mi. south of U. S. Hy. 66 and 4 mi. southeast of here.

August 25

Fla., Jacksonville — City, City Hall, paving sidewalks, driveways, curbing on Bernes, replacing or adjusting manholes, on parts of E. First, Lafayette, Front, Franklin, Gilmore, East Adams and Caroline Sts., ADV No. 3-2428. Capt. W. E. Shedden, Engineers Bldg., Zone 2, city engr.

LOW BIDDERS

Arizona—State Hy. Dpt., Phoenix, July 15, realignment 5½ mi. U. S. 66 between Ash Fork and Williams, from Basich Bros. Constr. Co., San Gabriel, Calif., **$565,538.** CD 7/8.

Arizona—State Hy. Dpt., Phoenix, July 22, oil surf. 5¾ mi. U. S. 66 east of Holbrook, Navajo Co., from Tiffany Constr. Co., W. Broadway Rd., Phoenix, **$233,421.** CD 7/15.

Colorado—State Hy. Dpt., Denver, July 22, surf., oil processing 24.32 mi. beginning at westerly city limits of Rangely and exten. Easterly through Rangely toward Meeker on State Hy. 64, Colo. Proj. S 0144 (5), Rio Blanco Co., from Blanchard Brothers, 56 and Holly Sts., Denver, **$149,928,** Est. $138,878. CD 7/12.

●**Colorado**—Bureau Public Roads, General Services Admin., 254 New Customhouse, Denver, July 27, constr. 9.534 mi. between Boulder and Idaho Springs, Colo. Forest Proj. 29-11, J1, K1, L1, and M1 (oiling project) Boulder Co., from Colorado Constructors, Inc., 725 W. 4th Ave., Denver, **$129,000.** CD 7/18.

Colorado—State Hy. Dpt., Denver, July 26, grav. 2.07 mi. State Hy. 20, from Huntsman gap to Mother Grundy via Clear Creek Canon. Colo. Proj. F 095-3 (3), Jefferson Co., from Hinman Brothers Constr. Co., Ft. Collins, **$188,910.** Est. $205,826. CD 7/18.

Florida—State Rd. Dpt., Tallahassee, July 28, paving 13¾ mi. Gulf Coast Hy. between Tarpon Ave., Tarpon Springs and Gulf-to Bay Blvd., in Clearwater, Pinellas Co., from Cone Brothers Constr. Co., Caeser Ave. and Cumberland St., Tampa, **$552,609.**

●**Kentucky**—State Hy. Dpt., Frankfort, July 22, from Highland Constr. Co. Inc., 644 Baxter St., Louisville, grade, drain, traffic bound limestone, 6.612 mi. Glasgow-Flippin Rd., S 331 (4) SP (5-112) (86-214). Barren and Monroe Counties, **$112,285***** traffic bound limestone 3.187 mi. Tompkinsville-Sulphur Lick Barren Co. Rd., RS 86-294, Monroe Co., **$58,013***** from Codell Constr. Co. Inc., Winchester, grade, drain, traffic bound limestone 2.179 mi. Pineville-Henson-Harlan Rd., S 73 (2) SP 7-44, Bell Co., **$69,968;** grade, drain, traffic bound slag, 5.037 mi. Salyersville-Royalton Hindman Rd. S 429 (3) SP 77-60, MaGoffin Co., **$257,620***** from M. T. Codell & Co. Ind., Winchester, grade, drain, traffic bound limestone 5.852 mi. Lexington-Circle Rd., UI 538 (1) SP 34-304, Fayette Co., **$435,201***** from R. R. Dawson Bridge Co., Bloomfield, grade, drain, traffic bound limestone 2.3 mi. and bridges, Corbin-Williamsburg-Jellico Rd., FI 23 (17), SP (118-280) (118-20) (118-100), Whitley Co., **$452,104***** from Breslin Constr. Co., 1801 S. Brook St., Louisville, b conc. Class 1 12,706 mi. SP Group 68 (1949), Bath Co.,

$184,006***from R. I. Cocke, Mayfield, local bank or creek grav. 12.037 mi. Strickland (Blandville-LaCenter Rd.), RS 4-221 Ballard Co., **$118,081*****from J. C. Codell Co. Inc., Winchester, traffic bound limestone 11.916 mi. Midland-Yale (Licking River) Rd., RS 6-164, Bath Co., **$141,420.**

traffic bound limestone 8.974 mi. Dewitt-Hammond-Salt Gum Rd., RS 61-510, Knox Co., **$172,087*****from Kentucky-Virginia Stone Co., Middlesboro, reconstruction and traffic bound limestone 4.598 mi. Pineville-Clear Creek Springs Frakes Rd., RS 7-224, Bell Co., **$69,451*****from Edward J. Carlisle, Madisonville, traffic bound limestone 4.465 mi. Princeton-Lamasco Rd., RS 17-362, Caldwell Co., **$83,849*****from Arnett Constr. Co., Berea, traffic bound limestone 4.609 mi. Little Sexton Creek Rd., RS 26-145, Clay Co., **$87,052***** traffic bound limestone 13.561 mi. RS 26-145, RS 26-505, RS 26-445, Clay Co., **$247,044***** from Regenhardt Constr. Co., Cape Girardeau, Mo., traffic bound limestone 5.45 mi. Cottongin Rd., RS 26-445, Clay Co., **$108,821.**

from R. B. Tyler Co., 1446 Levering St., Louisville, B. conc. Class C-1, 7.68 mi. Albany-Shipley Rd., RS 27-226, Clinton Co., **$66,974;** traffic bound limestone and b. conc. Class C-1, 8.328 mi., RS (105-214) (94-419) and RS (105-254), **$70,492;** traffic bound limestone 3.413 mi. Bethesda-Tennessee State Line Rd., RS 116-79, Wayne Co., **$75,316*****from Stephens-Jeffrey Co., Tompkinsville, reconstruction and traffic bound limestone 1.803 mi. Waterview-Mud Camp Tompkinsville Rd., RS 29-147, Cumberland Co., **$66,153*****from Davis & Shelton Constr. Co., Sandy Hook, traffic bound limestone 5.152 mi. SP 32-169 and SP 32-209, Elliott Co., **$62,499*****from Paul A. Teegarden, Columbus, Ind., river grav. 7.016 mi. Airline Rd., RS 51-519, Henderson Co., **$82,710***** from Lyons & Breeden, Rogersville, Tenn., traffic bound limestone, 7.822 mi. Montana-Dan-White Plains Rd., RS (54-680), Hopkins Co., **$138,823.**

from Ruby Constr. Co., Madisonville, reconstruction and traffic bound surf. 13.972 mi. RS 54-640 and RS 54-680, Combined Bid, Hopkins Co., **$191,923*****from J. G. Exterkamp Sons, Covington, reconstruction and traffic bound surf. 4.909 mi. Turkey Foot Rd., RS 29-335, Kenton Co., **$81,203*****from Kentucky Road Oiling Co., Frankfort, reconstruction and traffic bound limestone 13.18 mi. Webbville-Blaine Rd., RS 64-253, Lawrence Co., **$229,156*****from Kiser Constr. Co., Olive Hill, reconstruction and traffic bound surf. 5.251 mi. Scott Branch Rd., RS 68-174, Lewis Co., **$80,961;** reconstruction and traffic bound surf. 1.360 mi. Upper Licking Rd., RS 105-282, Bowan Co., **$121,426*****from Allen-Cozell Co., Inc., Winchester, bit. surf. Class F, 14.250 mi. Kirksville-Edenton Rd., RS 76-371, Madison Co., **$52,281*****from Greer Bros. & Bullock, Loudon, traffic bound limestone 5.348 mi. Travelers Rest-Scoville Rd., RS (95-156) (95-156), Owsley Co., **$84,627;** reconstruction and traffic bound surf. 3.021 mi. Sturgeon Conkling Rd., RS 95-156, Owsley Co., **$50,517*****from Meyers & Greene, Hazard, local bank or creek grav. 7.922 mi. Harrison-Stacey Rd., RS 97-722, Perry Co., **$137,605.**

from Adams Trucking & Constr. Co., Paintsville, bit. surf. Class C-1, 6.207 mi. Dorton Creek Rd., RS 98-563, Robinson Creek-Esco-Lookout Rd., RS 98-783, Turkey Creek Rd., RS (98-543), Pike Co., **$92,959*****from J. C. Codell Co. Inc., Winchester, reconstruction and traffic bound surf. 6.958 mi. Shopville-Grunev Somerset Rd., RS 100-678, 692 mi. Hy. 225, U. 1081 (3), Harris Co. **$215,000.** CD 7-27.

+Wyoming—Bureau Public Roads, General Services Admin., 254 New Customhouse, Denver, Colo., 4.487 mi. Moffat-Tenderfoot Forest Hy. Proj., Forest Hy. Proj. 10-E3, Washakie Co., from Leach Brothers, P. O. Box 720, Wheatland, **$351,592.**

CONTRACTS AWARDED

●**Arkansas**—State Hy. Dpt., Little Rock, road work 9.3 mi. Hy. 5, Midway, Baxter Co., and road work 18 mi. Salgohachie—North and South Rd., Hy. 9, Solgohachie, Conway Co., to Freshour Brothers, Sweet Home, **$64,079** and **$320,214** respectively***road work 7.4 mi. Hy. 143, Caraway, Craighead Co., to Buckton Constr. Co., Hazen, **$153,786*****road work and bridge Cedarville-Evansville Rd., Hy. 59, Crawford Co., to Forsgren Brothers, Ft. Smith, **$197,625*****road work 3.4 mi. between Portia and Black Rock Hy., 63, Lawrence Co., from Olentine Jones Co., 19 St. Pike, Little Rock, **$258,310*****road work 4.4 mi. on Hy. 23, Huntsville, Madison Co., to Southeast Constr. Co., Pine Bluff, **$97,804*****road work 6.5 mi. Holly-Grove-North Rd., Hy. 17, Monroe Co., to Ben M. Hogan Co., 1100 Fairview St., Little Rock, **$198,450*****road work 9.5 mi. Hys. 17 and 38, Woodruff Co., to J. B. Michael & Co., 1021 Heywood St., Memphis, Tenn., **$137,027.** Grand total, **$1,427,325.** Bids 7/29.

Ark., Marked Tree — City, Marked Tree, street imprv., to Lehman-Roberts Co., 575 N. Front St., Memphis, Tenn., **$118,000.** Bids 7/20, awarded 7/28. CD 7/12.

Ia., Waterloo — City, City Hall, c. conc. streets, to John G. Miller Constr. Co., Waterloo, **$56,616;** asph. macadam paving, streets, to Wilder-Ray Paving & Equipment Co., Waterloo **$66,144.** Bids 7/25.

Kentucky—State Hy. Dpt., Frankfort, grade, drain, bank or creek gray. 6 mi. Bradfordsville-Gravel Switch Rd., S 169 (1), SP 78-262, Marion Co., to R. B. Tyler Co., 1446 Levering St., Louisville, **$240,422.** Bids 7/22. CD 7/8.

Minnesota—State Hy. Dpt., St. Paul, c. conc., bit. surf. 0.7 mi. Rochester, S. P. 5502-06 1107, from Mahoney Bros., Knickerbocker Bldg., **$78,241*****b. conc. Hy. Cntr. 1008, from National Paving & Contg. Co., 2525 Loch Raven Rd., **$81,421.** CD 7/20.

Mass., Boston—City, P. Wks. Dpt., City Hall Annex, Boston, July 18, sheet asph. roads, sewerage work, laying and relaying watermains, Boston Housing Development, Mattapan, from Baker & Co. Inc., 3475 Washington St., Jamaica Plain, **$113,000.**

Mississippi—State Hy. Dpt., Jackson, July 26, grading, drainage, culverts, c. conc. paving 1.848 mi. U. S. Hy. 61 between Redwood and Rolling Fork, Proj. WER FA-1 (1) Contr. V. Warren Co., from O. J. Ward, Inc., 755 Gladstone Blvd., Shreveport, La., **$113,605,** Est. $60,000. CD 7/19.

Pa., Philia.—Dpt. P. Wks., City Hall Annex, paving, grading, etc., various locations, Schedules B-1, D, G-1 from Eastern Asphalt Co., Packard Bldg., **$85,446*****paving various locations, Schedules B-3, C-2, K, from Mack Paving & Constr. Co., Luzerne and C Sts., **$59,691*****paving various locations, Schedules C-2, C-4 and paving various locations, Schedule F, from James D. Morrisey, Inc., 9119 Frankford Ave., **$57,547** and **$102,850** respectively***paving Schedules B-7, C-1, E and Schedules B-2, 4, 5, 6, from General Asphalt Paving Co., 6851 Rising Sun Ave., **$50,683** and **$59,377** respectively***paving various locations, Schedule I-3, from State Paving & Constr. Co., 1924 Arch St., **$74,928,** Dudley T. Corning, Highways Chief. CD 10/30/44.

South Dakota—State Hy. Comn., Pierre, July 26 base course 8.96 mi. F. 460 (6) Hutchinson Co. from C. H. Lien Constr. Co., Rapid City, **$139,070*****base course and bit. surf. 4.998 mi. S 110 (4), Turner Co. from W. E. Bartholow & Son Constr. Co., Huron, **$65,388*****grading 13.334 mi. S 140 (1), Perkins Co. from J. F. England Constr. Co., Rapid City, **$124,149.** CD 7/14.

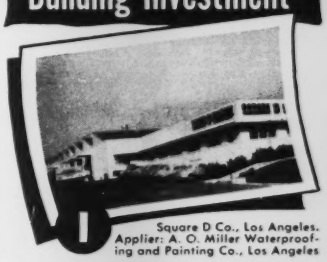
Tennessee—State Hy. Dpt., Nashville, July 28, grade, base 8 mi. from Swaford Store to Rt. 22, Cumberland Co. line, Proj. R-5027 (1), Bledsoe Co., from Gamble Constr. Co., Lee Hy., Chattanooga, **$322*****base 14.2 mi. county roads, Davidson Co., from Inter State Constr. Co., 3rd Natl. Bank Bldg., Nashville, **$118,522*****S. B. S. T. and base 5.9 mi. from Junct. 25 via Bonicord to Crockett county line and 2.5 mi. Jct. 20 to Crockett via Jasper and Baker's to Crockett Co. line R-9021 (1) and R-9019 (1), Dyer Co. from Memphis Stone & Gravel Co., Exchange Bldg., Memphis, **$58,681*****IRMS 7.4 mi. from Georgia State Line via Ooltewah to Georgetown and 7.3 mi. from Ooltewah Georgetown Rd. to near Snow Hill, Proj. R-4306 (1) and R-5109 (1), Hamilton Co., from Combs Constr. Co., 201 Chestnut St., Chattanooga, **$54,049.** CD 7/18.

●**Texas**—State Hy. Comn., Austin, cancelled bids to have been opened August 16, asph. paving and sand asph. surfacing 14.852 mi. Hy. U. S. 281 and FM-1099, F 166 (3) and (2) and S. 1288 (1), Atascosa and Live Oak Counties. Est. **$345,000*****grading, storm sewer, flexible base, asph. surf. c. conc. pavement, bridge 1.35 mi. U. Hy. 75 and State 35, U. 32 (12) and U. 679 (4), Harris So. **$765,000** ***grading and structures 3.871 mi. U. S. Hy. 67, F. 592 (13), Ellis Co. **$70,000.** CD 7/27.

Texas—State Hy. Comn., Austin, cancelled bids to have been opened August 17, grading, structures 15.092 mi. Hy. U. S. 96, F. 327 (8) and (9), Sabine and San Augustine Counties, **$295,000*****grading, channel imprv., structures, flexible base, 4.992 mi. Hy. 225, U. 1081 (3), Harris Co. **$215,000.** CD 7-27.

+Wyoming—Bureau Public Roads, General Services Admin., 254 New Customhouse, Denver, Colo., 4.487 mi. Moffat-Tenderfoot Forest Hy. Proj., Forest Hy. Proj. 10-E3, Washakie Co., from Leach Brothers, P. O. Box 720, Wheatland, **$351,592.**

How Arco's Big 3 Can Protect Your Building Investment



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INSULATES—applied 1/16" to 1/8" thick, provides extra insulation and protection.

PLIABLE—Expands and contracts with ordinary movement of building surface.

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HEALS ITSELF—If outer surface is broken, undersurface heals at point of abrasion.

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3 STACK DUM DUM—Heavy coating, protects concrete stack surfaces against vibration, high temperatures and general weather wear.

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Cleveland 4, Ohio

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☐ Please supply names of appliers operating in this locality.

☐ Please have maintenance engineer call.

Name Title

Company

Street & No.

City Zone State

ARCO Maintenance Products

(TH 14-7), to Fielding & Shepley, 1258 Bohn Ave., St. Paul, **$80,387*****grav. base, road mixed bit. surf. 12 mi. S. P. 4305-09 (TH 15-151) and S. P. 4706-07 (TH 15-151), to Mark Sand & Gravel Co., Fergus Falls, **$125,207*****grav. base and road mixed bit. surf. 10.7 mi. S. P. 5307-10 (TH 91-91), to Ulland Bros., Austin **$88,045*****plant mixed bit. surf. 11.9 mi. S. P. 0414-04 (TH 89-136), to C. L. Nelson & Co., Brainerd, **$61,889*****c. conc., asph. conc. surf. 0.9 mi. University Ave., St. Paul, S. P. 6208-06 (TH 12-104) U. S. 307 (17), to Alexander Constr. Co., 4641 Hiawatha Ave., Minneapolis, **$288,813*****grading, bit. surf. 11.7 mi. S. P. 1810-10 (TH 371-19), to Farrell Contg. Co., 1607 Wayne Ave., St. Paul, **$84,182.** Grand total $728,523. CD 7/13.

Mississippi—State Hy. Dpt., Jackson, grading, drainage, culverts, bit. surf. tr. 6.994 mi. county highways between Liberty and Gillsburg and between Liberty and Smithdale F. A. S. P. Os. S 107 (1) and F. A. S. P. 285 (2), Amite Co., to Dickerson & Bowen, Brookhaven, **$107,828.** Est. $93,000. Bids 7/26, awarded 7/27. CD 7/8.

●**Mississippi**—State Hy. Dpt., Jackson, grading, drainage, culverts, bridge, 10.737 mi. Mississippi Hy. 4, between Holly Springs and Ashland, Miss., Forest Proj., 4-A, Marshall and Benton Counties, to Kile-Killman Constr. Co., Macon, **$209,331.** Est. $225,000***grading, drainage, culverts, grav. surf. 5.188 mi. Miss. Hy. 12, between Leroy Percy State Park and Hollandale, F. A. S. P. No. S 262 (2), grading, drainage, culverts, grav. surf. 9.071 mi. Miss. Hy. 1, between Hawarden and Longwood, F. A. P. F 295 (1), both Washington Co., to M. L. Green, Woodville. **$75,561.** Est. $75,000 and **$148,632.** Est. $160,000 respectively***grading, drainage, culverts, box bridge, grav. surf. 5.726 mi. Co. Hy. between Bay Springs and Heidelberg, F. A. S. P. S 211 (1), Jasper Co., to Luther J. McGill, Batesville, **$50,748.** Est. $50,000***grading, drainage, culverts, bridges, bit. surf. 2.794 mi. Co. Hy., between Tallapoosa and Vance, F. A. S. P. S 167 (2), Quitman Co., to J. L. O'Neal, Batesville, **$93,899.** Est. $95,000 ***roadway protection 10.381 mi. U. S. Hy. 90 between Henderson Point and Biloxi, F. A. P. ER-U-2 (3), Contr. II, Harrison Co., to Cook Constr. Co., Standard Life Bldg., Jackson, **$220,564.** Est. $280,000***grading, drainage, culverts, c. conc. 10.381 mi. U. S. Hy. 90 between Henderson Point and Biloxi, F. A. P. ER-U-2 (2), Contr. I, Harrison Co., to Clark Bros. Constr. Co., First Federal Savings & Loan Bldg., Jackson, **$206,113.** Est. $106,000. Grand Total $1,004,848. Bids 7/26. Awarded 7/26. CD 7/19.

Ore., McMinnville — City, City Hall, street surf. to J. C. Compton, McMinnville, **$122,750.** Est. $150,000. Bids 7/22. CD 7/13.

●**Pennsylvania**—Pennsylvania Turnpike Comn., 11 N. 4 St., Harrisburg, grading, drainage structures, paving 4.89 mi. Sect. 25-A, Philadelphia Exten. of Pennsylvania Turnpike from point 230 ft. west of L. R. 36128 in Clay Twp., easterly for 25.813 ft. to point about 2,000 ft. West of Township route 824 in West Cocalico Twp., Lancaster Co. to H. J. Williams, York, **$2,048,768;** grading, drainage structure, paving Sect. 25-B, Philadelphia Exten. of Pennsylvania Turnpike from point about 2,000 ft. east of Twp. route 824 in W. Cocalico Twp. easterly for 14,374 ft. to point about 1,214 ft. east of Twp. route 850 in East Cocalico Twp., Lancaster Co. to Ralph Myers, Salem, Ind. **$1,896,394.** Bids 7/11. CD 7/14, under LB.

South Dakota—State Hy. Comn., Pierre, bit. surf. 16.533 mi. FAP 214 A, Marshall Co. to Jay W. Craig Co., 1814 N. E. California St., Minneapolis, Minn., **$74,212;** bit. surf. 15.378 mi. FAPs 26, Brit 5 and Brit 5 (2), and 115 in Kingsbury and Brookings Counties to P. A. Bradbury Constr. Co., 124 1 Ave. N. E., Aberdeen, **$91,348;** base course 5.796 mi. SPP 5, Custer Co. to Floyd D. Stapp Const. Co., Rapid City, **$51,830.** Grand total $226,390. Bids 7/26. CD 7/14.

EARTHWORK, WATERWAYS

BIDS ASKED

August 15

Ont., Welland—F. T. Collins, secy., c/o Dpt. Transport, Hunter Bldg., Ottawa, lowering, flattening slopes by excavation above and below water level of westerly bank ship canal, between Stations 1100 plus 00 and 1108 plus 00. Approx. $60,000. Plans deposit $10.

Ont., Tignish—Secy., c/o Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., breakwater repairs, Approx. $65,000. Plans deposit $10. R. Blais, c/o owner, engr.

August 16

✝**Arkansas**—U. S. Eng., 300 Broadway, Little Rock, emergency levee repair, T. A. Gibson Private Levee, Arkansas River, Watershed, Arkansas River, Serial No. CIVENG-03-050-50-9.

✝**Louisiana**—U. S. Eng., foot of Prytania St., New Orleans, approx. 4,560 lin. ft. gravel roadway and approx. 200 lin. ft. fence, piping on Mississippi River Levees. Inv. 50-25, West Baton Rouge Parish.

August 17

✝**Louisiana**—U. S. Eng. foot Prytania St., New Orleans, approx. 833,000 cu. yd. semi compacted levee embankment, relocating approx. 15,000 lin. ft. highway, Avoyelles Parish; approx. 925,000 cu. yd. semi-compacted embankment, Mississippi River Levees, Tensas Parish, Serial No. Eng. 16-047-50-23.

N. S., La Have River and Caribou—J. M. Somerville, secy., c/o Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., dredging 200 cu. yd. boulders, 102,751 cu. yd. sand, clay, silt, mud, stones, gravel, rocks, etc. Approx. $95,000. R. Blais, c/o owner, engr. CD 3.12/46, under Caribou.

Ont., Owen Sound—Secy., c/o Dpt. P. Wks., Hunter Bldg., Ottawa, dredging 30,000 cu. yd. sand, silt and gravel from harbor. Approx. $45,000. R. Blais, c/o owner, engr. CD 7/1 48.

Que., Vercheres—J. M. Somerville, secy., c/o Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., harbour repairs, imprvs., reconstruction 2 breakwaters. Approx. $157,000. Plans deposit $20. R. Blais, c/o owner, engr.

August 18

✝**Iowa and Nebraska**—U. S. Eng., 1709 Jackson St., Omaha, Zone 2, Neb., approx. 7,047 lin. ft. dikes and revetments, Missouri River, Boyer—lower Pigeon Creek Bends, Pottawattamie Co., Ia., and Douglas and Washington Counties, Neb., approx. 5 mi. upstream from Florence, Neb., Serial No. Eng., 25-066-50-5.

✝**Louisiana**—U. S. Eng., foot Prytania St., New Orleans, approx. 457,000 cu. yd. semi-compacted levee embankment, South Bank Red River Levees, Serial No. Eng.-16-047-50-26. Avoyelles Parish.

✝**Mississippi**—U. S. Eng., P. O. Box 60, Vicksburg, change house and boat rental concession bldgs., public use facilities, Lower Lake, Sardis Dam, Serial No. CIVENG 22-052-50-16.

August 19

✝**Arkansas**—U. S. Eng., 300 Broadway, Little Rock, emergency levee repair, Little Red River Levee Dist. 2, Little Red River, White River Watershed, Serial No. CIVENG-03-050-50-10.

✝**West Virginia**—U. S. Eng., Madison Ave. and 8 St. W., Huntington, Zone 18, grounds and utilities for Bluestone Dam, Bluestone Reservoir Proj., New River, Serial No. CIVENG.-46-022-50-11. Extended date. CD 7/21.

LOW BIDDERS

✝**California**—U. S. Eng., Wright Bldg., Sacramento, July 26, sluice gates, appurtenances for Pine Flat Dam Proj., from Washington Iron Wks., 1500 6 St., Seattle, Wash., **$552,665.** CD 6/2.

Illinois and Missouri—U. S. Eng., 826 U. S. Courthouse and Custom House, St. Louis, Zone 1, cancelled bids to have been opened August 2, constructing timber piling clump dikes and bank protection, Mississippi River, Inv. No. CIVENG-23-065-50-2. CD 7/22.

Minn., Wheaton—Traverse Co., R. L. Johnson, and, Wheaton, July 15, Judicial Ditch 12, incl. 16 mi. main ditch, from Diegeth Constr. Co., Fergus Falls, **$128,591;** structures and 34 mi. laterals 1 to 6 (inclusive) from Barnard Curtiss Co., 608 Phoenix Bldg., Minneapolis, **$122,229** and **$109,897** respectively. CD 6/16.

CONTRACTS AWARDED

Ind., Lebanon—Boone Co., Lebanon, drainage project, to W. F. Schmidt, Corydon, **$59,000.** Est. $85,000.

N. J., Ocean City—N. J. Dpt. Conservation, and City of Ocean City, jetty and seawall, Sea Spray Ave., to Jesse A. Howland Co., 50 Church St., Long Branch, **$569,375.** CD 4/2 47.

✝**North Dakota**—U. S. Eng., 1217 U. S. Post Office and Custom House, St. Paul 1, Minn., spillway and embankment closure, Stage 2, Homme Dam, near Park River, Serial No. Eng.-21-018-49-85, to Donovan Constr. Co., 1725 Carroll Ave., and James Constr. Co., 417 Pioneer Bldg., St. Paul, Minn., **$498,474.** Bids 5/17. CD 5/25, under LB.

●✝**Oregon**—U. S. Eng., 19 E. Poplar St., Walla Walla, Wash., cofferdam on Oregon shore for McNary Dam, Eng.-45-164-49-111, Umatilla Co., to McNary Dam Contractors, Plymouth, Wash., **$15,855,539.** Four bids. Bids 7/19, awarded 7/27. CD 7/22, under LB.

Tex., Wichita Falls—R. G. Hughes, Pampa, site development, grading, drainage. Own forces. **$35,000.**

✝**Va., Norfolk**—U. S. Eng., foot of Front St., construct dredging range beacons, Norfolk Harbor. Eng.-44-110-49-207 to Tidewater Constr. Co., 538 Front St., **$29,212.** Bids 6/21. CD 6/8.

✝**Washington**—U. S. Eng., 4735 E. Marginal Way, Seattle Zone 4, riprap test sections, Green River, Serial No. Eng-45-108-49-202, to Smith Brothers, Silica, Sand Co., Rt. 1, Box 1027, Auburn, **$75,868.** CD 6/10.

AIRPORTS AND AIRBASES

BIDS ASKED

August 17

●✝**O., Cleveland**—PROPULSION SCIENCES OPERATIONS BLDG. — National Advisory Com. for Aeronautics, Administration Bldg., Brookpark Rd., 2 story, brick and block propulsion sciences operations bldg. at Brookpark and Greyton Rd. $10,000,000. Burns & Roe, Inc., 223 Broadway, New York, N. Y., archt.

LOW BIDDERS

Mo., St. Joseph — HANGAR — City Aviation Bd., City Hall, steel, concrete hangar, Rosecrans Field, from Frank Leslie, 322 S. 7 St., St. Joseph, **$56,050.** Eckel & Aldrich, Corby Bldg., archts.

CONTRACTS AWARDED

Pa., Phila. — DRAINAGE — Dpt. P. Wks., City Hall Annex, drainage work, Northeast Airport, to Leva Bros., 5416 Rising Sun Ave., **$83,444.** A. Zane Hoffman, c/o owner, ch. engr. CD 2/19/46.

Pa., Pittsburgh—PARKWAY—Comrs. Allegheny Co., County Office Bldg., Contr. 3, drainage and paving airport parkway, to Dinardo, Inc., 323 Boquet St., **$179,789.** Est. $200,000. CD 1/15/45.

Wash., Everett — RUNWAY EXTEN. — Snohomish Co., Courthouse, drainage of northsouth runway exten., to Odegard Constr. Co., Everett, **$52,071.** Bids 7/25.

FOREIGN

Egypt—Hydroelectric Power Dpt., Sharia Maamal El Sukkar, Garden City, Cairo, receiving bids, sluice gates, pipelines and surge tanks for hydro-electric power station at Aswan Dam, Kennedy & Donklin, 12 Caxton St., London, S. W. 1, consult. engrs. CD 12/14/45.

PUBLIC BUILDINGS

BIDS ASKED

About August 15

Ont., Kingston — MEMORIAL COMMUNITY CENTER—W. J. Watts, pres., Kingston Community Memorial Health and Recreation Center, 227x337 ft. brick, stone memorial community center, 90x190 ft. ice arena, Approx. $450,000. Drewer & Smith, 81 Brock St., archts.

August 16

D. C., Wash. — POLICE STATION — Dist. Comrs., District Bldg., No. 14 Police Station bldg., 42 St. and Benning Rd. N. E.

August 17

Conn., New Haven—SCHOOL—Bd. Educ., 169 Church St., school, $550,000. Joseph Della Valle, 153 Court St., archt. CD 7/8, 48.

Mass., Beverly — HOUSING — City of Beverly, Housing Auth., c/o E. F. O'Callahan, Cabot St., 2 story brick veterans housing proj., incl. 76 units, Sawyer Rd. and Herrick St., $823,000. Plans deposit $100. Ray Thibedeau, 81 Washington St., Salem, archt. CD 7/14.

August 18

✝**Nebraska**—RESIDENCES—Bureau Reclamation, Dpt. Interior, Imperial, residence, foundation of future garage, water, gas and sewage disposal sys., for caretakers residence and maintenance facilities at Enders Dam, Frenchman-Cambridge Div., Missouri River Basin Proj. Spec. R7-73 (Region 7). Extended date. CD 7/18.

N. Y., New York — POWER PLANT — Dpt. Pub. Wks., Municipal Bldg., Zone 7, general constr.; plumbing; electrical for power plant expans., Phase II, combined steam tunnel and sea wall, stage 2, at Welfare Island. Plans deposit $25. CD 11/14/46.

●**Okla., Norman**—UNION—University of Oklahoma, Student Union Bldg. of Governors, Norman, 3 story, 1,183,580 cu. ft. masonry Union, Bldg. and addn., $1,150,000. Sorey, Hill & Sorey, 809 N. W. 36 St., Oklahoma City, archts. CD 7/21.

August 19

Mass., New Bedford — HOUSING — City Housing Auth., New Bedford, housing proj. incl. eighty units, 15 bldgs., 3 and 6 units a bldg., row type, Nash Rd. and Mt. Pleasant Blvd., Proj. 200-3, $800,000. Plans deposit $100. Tallman, La Brode & Rounseville, 222 Union St., archts. CD 7/26/48.

Mont., Sidney—SCHOOL—Richland Co. High School Dist. and School Dist. 5, Sidney, 3 story, steel, concrete high school addn., 2 story, 78x166 ft., steel, concrete timber grade school addn. $400,000. Chandler C. Cohagen, Hedden Bldg., Billings, archt. CD 7/21.

About August 22

✝**N. M., Albuquerque**—GATE HOUSE—U. S. Eng., P. O. Box 1538, 20x22 ft. masonry unit W-cut Gate House (EOP-324) with steel beam, gypsum plank and built-up tar and gravel roof, Serial No. Eng-29-005-50-7.

August 23

Calif., San Bernardino — ARMORY — State Div. Architecture, P. Wks. Bldg., Sacramento, Armory Type E, California National Guard. Plans deposit $25. Anson Boyd, Sacramento, state archt.

●✝**Ind., Bloomington** — SCHOOL — Indiana University, Bd. Trustees, J. A. Frank, vice-pres., treasurer, Bloomington, 4 story 47x66 ft. and 62x173 ft. brick, stone, rein.-con., structural steel school bd. education bldg., $1,250,000. Plans deposit $25. McGuire & Shook, 1400-01 Fletcher Trust Bldg., Indianapolis, archts. and Bevington, Taggart & Fowler, Indiana Pythian Bldg., Indianapolis, mech. engrs. CD 2/14.

●✝**Tex., Austin** — POWER PLANT — City, Guiton Morgan, mgr., City Hall, construct main electric power plant. $2,000,000. Plans deposit $40. Burns & McDonnel Engr. Co., 925 and Troost Sts., Kansas City, Mo. engrs. CD 5/20.

LOW BIDDERS

Calif., Los Angeles—MARKET—Los Angeles Harbor Comn., City Hall, July 27, 80x420 ft. municipal wholesale fish market, facilities, from C. B. Bagnall, 1505 Border Ave., Torrance, **$558,983.** Est. $450,000.

Calif., Oakland—SCHOOL—Bd. Educ., 1025 2 Ave., July 26, 2 story, 100x300 ft. rein.-con. Joseph C. Laney Teade & Technical Institute, from Louis C. Dunn Co., 799 Monadnock Bldg., San Francisco, **$981,943.** CD 7/6.

Conn., Greenwich — SCHOOL — Bd. Educ., Town Hall, June 30, 3 story brick, stone, concrete school addn., from Chimbio Brothers, 399 Post Rd., Cos Cob, **$562,255.** CD 6/24.

Del., Elsmere (Wilmington P. O.)—SCHOOL—Oak Grove Special School Dist., 810 Wilmington Ave., Elsmere, Wilmington, school, from Rupert Constr. Co., 3400 Lancaster Pike, Wilmington, **$281,000.**

†Del., Wilmington—QUARTERS—Veterans Admin., Vermont Ave. between H and I Sts. N. W., Wash. 25, D. C., July 28, 4 separate quarters for veterans hospital, from George H. Evans Co., 1914 Spring Garden St., Phila., Pa., **$318,965.** CD 6/29.

N. C., Durham—LIBRARY—North Carolina College for Negroes, Durham, July 26, library, from R. K. Stewart & Son, High Point, **$456,-222.** CD 7/7.

Pa., Harrisburg — BUILDING — Dpt. Property & Supplies, 18 and Herr Sts., Harrisburg, July 27, general constr. female disturbed patients bldg. at Harrisburg State Hospital from S. H. Evert Co., Inc., Danville Rd., Bloomsburg, **$566,163.** CD 6/27.

Va., Capron — BUILDING, DORMITORY — State of Virginia, Richmond, July 26, construct Southampton Prison Farm, Rooms Bldg. No. 1 and dormitory Bldg. No. 1 from Thorington Constr. Co., 205 E. Canal St., Richmond, **$329,872.** Carneal & Johnson, Atlantic Life Bldg., Richmond archts. Wiley & Wilson, American Bldg., Richmond, engrs.

Wis., New Holstein—SCHOOL—Bd. Educ., New Holstein, July 15, general contract high school, gymnasium, shops, from Oudenhoven Constr., Kewaskum, high school and gymnasium, **$338,118;** high school, gymnasium and shop, **$381,299;** high school gymnasium, shop and grade school, **$459,809.**

B. C., Vancouver—GYMNASIUM—Province of British Columbia, Parliament Bldg., Victoria, rein.-con., steel memorial gymnasium, at University of British Columbia, from Dawson & Hall Ltd., 775 Clark Dr. Approx. **$636,-820.** Sharp & Thompson, Berwick, Pratt, 1553 Robson St., archts. CD 6/23/47.

CONTRACTS AWARDED

Calif., Los Angeles — INFIRMARY — Bd. Supervs. Los Angeles Co., 501 Hall of Records, three 1 story, 13,150 sq. ft. and 102 bed each infirmary bldgs., at Rancho Los Amigos, Rio Hondo, to Buttress & Mc Clellan, 1013 E. 8 St., **$536,254.** Bids 6/28.

●Fla., Jacksonville — CABLES, etc. — City, City Hall, supplying, install approx. 15,000 ft. submarine cable and accessories, for Power Plant No. 2, Southside with city's main generating plants and underground distr. sys., to Miller Electric Co., 247 Riverside Ave., and Henry Ihle, Chicago, Ill., **$1,823,000.** CD 6/30.

Ind., Gas City — SCHOOL — Mississinewa School Holding Corp., Gas City, 2 story, brick, stone, rein.-con., structural steel twp. high and grade school, Miss-as-sin-e-wa School, to Dunkin & Son, First National Bank Bldg., Bluffton, **$438,598,** est. $900,000. Hamilton & Graham, Western Reserve Bldg., Muncie, archts.

Ia., Milford—POWER PLANT IMPROVEMENTS—City, City Hall, power plant equipment for generating imprvs., to R. V. Leary Co., Inc., 311 Securities Bldg., **$73,445.** Bids 7/19. CD 6/30.

Ky., Louisville—SCHOOL—Bd. Educ., 506 N. Hall St., general contract Hazelwood School, Bilegrass and Lenty Aves., to George H. Rommel Co., 958 Logan St. **$928,835.** Bids 7/27. CD 7/12.

●N. Y., Brooklyn—HIGH SCHOOL— Supt. School Buildings, Design & Construction, 49 Flatbush Ave. exten., Zone 1, general contract, plumbing and drainage; heating, ventilating, electrical and lighting fixtures for Junior High School 240, Avenue K, E. 29 St. and Nostrand Ave., to Caristo Constr. Co., 26 Court St., Zone 2, **$2,097,000.** Bids 6/10. CD 6/24, under LB.

N. C., Burlington—HOSPITAL—Bd. Trustees Alamance Co. Hospital, B. E. Jordan, chn., Burlington, 100 bed general hospital to Southern States Constr. Co., 1211½ Washington St., Columbia, S. C., **$559,844.** Bids 7/12. CD 7/18, under LB.

O., Youngstown—SCHOOL—Bd. Educ., 20 W. Wood St., general contract Williamson School, to E. J. Salvidge Constr. Co., 338 W. Federal St., **$418,389.** Bids 7/26. CD 7/6.

Pa., Richland Twp.—HIGH SCHOOL—School Dist., Richland Twp. High School, Geistown, 2 story, part basmt., 61x177 ft. brick, Gumbo tile back up high school, to Gamble & Gamble, Bolivar, **$273,491.** Hunter, Caldwell, Campbell, 3604 5th Ave., Altoona, archts.

●†Tex., Fort Bliss (El Paso P. O.)—HOUSING—U. S. Eng., P. O. Box 1538, Albuquerque, N. M., 800 unit military housing units, to J. E. Morgan & Sons, 210 N. Campbell St., C. H. Leavell & Co., 1900 Wyoming St., and Better Homes, Inc., El Paso, Approx. **$7,500,000.** Awarded 7/29. CD 8/12/48.

Va., Martinsville—HIGH SCHOOL — Henry Co., Martinsville, Negro High School to Stanley W. Bowles, Martinsville, **$474,734.** Dixon & Norman, 1103 E. Main St., Richmond, archts.

†Washington—PLANT, etc.—Bureau Reclamation, Dpt. Interior, Ephrata, Burbank Pumping Plant 1; 115-kv substation, 13.2 kv switchyard; concrete discharge pipe, at Odair, Spec. R1-CB-16 (Region 1), Columbia Basin Proj., to Pfeiffer & Hohner, 6203 E. Sharpe Ave., Spokane, **$97,944.** CD 5/16.

W. Va., Keyser—SCIENCE—Potomac State School, Keyser, science bldg., at Potomac State School, to The John I. Vandergrift Co., Cumberland, Md., **$597,100.** CD 3/7, under LB.

W. Va., Parkersburg—SCHOOL—Bd. Educ. Wood Co., Courthouse, 2 story, brick, steel Fairplains Grade School, to Stephens Constr. Co., 217 4 St. Approx. **$250,000.** Frampton & Bowers, 412 11 St., Huntington, archts.

Ont., Belleville—HOUSING—Central Mortgage & Housing Corp., 393 Fleet St. W., Toronto, 100 houses. Proj. No. 3/49, to Zellar Contg. Co., 995 Wyandotte St. W., Windsor. Approx. **$700,000.** Bids 7/18. CD 7/7.

Ont., Ottawa—COURT HOUSE—City of Ottawa, and Carleton Co., Ottawa, 1 story court house addn., alterations, to Hill-Clark-Francis Ltd., Whitewood Ave., New Liskeard. Approx. **$500,000.** W. C. Sylvester, 46 Elgin St., archt. CD 2/4.

●Ont., Petawawa—HOUSING—Central Mortgage & Housing Corp., 395 Fleet St. W., Toronto, 25 houses, Petawawa (D. N. D. Non-Urban) Proj. 1/49, to M. Sullivan & Son, Ltd., 234 Elgin St., Arnprior. Approx. **$1,700,000.** CD 6/23.

COMMERCIAL BUILDINGS

BIDS ASKED

August 16

●Del., Wilmington—RETAIL STORE, etc.—Sears, Roebuck & Co., Roosevelt Blvd. and Adams Ave., Phila., Pa., retail store, farm store and service station, $2,000,000. The Ballinger Co., 121 N. Broad St., Phila., Pa., archt. CD 4/21/48.

August 17

S. C., Lexington—HEADQUARTERS—Mid-Carolina Electric Co-operative, Inc., H. R. Long, pres., Lexington, headquarters bldg. Plans deposit $25. J. Whitney Cunningham, 210 Shelor Bldg., Sumter, archt.

August 18

Colo., Pueblo — SCHOOL — Pueblo Catholic High School, Most Rev. Joseph C. Willging, Pueblo, 2 story, basmt., 124x218 ft. and 67x110 ft. wing, brick high school. $400,000. John K. Monroe, 400 Security Life Bldg., Denver, archt. and engr. CD 2/13/48.

August 26

●Calif., Los Angeles—DORMITORY—University of Southern California, 3551 University Ave., (selected list of bidders) 4 story H-shaped brick, concrete womens dormitory, $1,240,000. Samuel E. Lunden, 400 Rowan Bldg., archt. CD 1/14.

SOON LETS CONTRACT

Del., Wilmington—HOSPITAL—Wilmington General Hospital, Broome and Chestnut Sts., soon lets contract hospital addns. $250,000. G. Morris Whiteside, 2nd, du Pont Bldg., archt. CD 2/11.

Mass., Boston — HOSPITAL—Peter Bent Brigham Hospital, 721 Huntington Ave., soon lets contract hospital alterations and addns. Approx. $250,000. Marcus & Necka, 251 Columbus Ave., archts.

Mass., Leominster—THEATRE—Leominster Recreation Assn. Inc., L. B. Kavanaugh, ch. Bldg. Comn., 25 Water St., soon lets contract Rialto Theater alterations, 55 Main St., $350,000. Plans deposit $35. H. E. Mason, 53 Merriman Ave., archt., extended date. CD 7/20.

Minn., Moorhead—HOME FOR AGED—Lutheran Home of Moorhead Circuit, Rev. T. Anderson, mgr.-treas., Moorhead, soon lets contract 2 or 3 story, brick home for aged, $350,000. Goss & Co., Moorhead, archts.

N. Y., Rochester—OFFICE, etc.—Hart Food Stores, Inc., 120 Portland Ave., soon lets contract, office and warehouse. $700,000. Adde & Todd, 25 North St., archts.

O., Cleveland — CHURCH — Our Lady of Peace, 12505 Buckinham Rd., soon lets contract 1 story, 98x170 ft., limestone, brick church, Shaker Blvd. between E 126 and 127 Sts. $300,000. Stickle, Kelly & Stickle, 2422 Prospect St., archts. CD 7/13.

Pa., Springfield—CHURCH, etc.—Henry D. Dagit & Sons, archts., 1329 Race St., Phila., soon let contract, church and school, for Holy Cross Roman Catholic Church, c/o archt. Approx. $250,000. CD 4/1.

R. I., Westerly—CHURCH—Central Baptist Parish, Mr. Crouch, chn., Westerly, soon lets contracts 1 and 2 story, basmt., 325,000 cu. yd. church, Elm St. $250,000. Cram & Ferguson, 248 Boylston St., Boston, Mass., archts. CD 1/28/48.

Tex., Dallas — CHURCH, COMMUNITY UNIT—Greek Orthodox Church, 2606 Riggs St., soon lets contract 52x112 ft. main church, 61x139 ft. community unit, brick, hollow tile, concrete frame, concrete slab fdn. constr. $250,000. Wade H. Klamberg, 3832 Bryn Mawr St. engr.

Que., Berthierville—CONVENT—J. A. Larue, archt., 5711 Durocher St., Montreal, soon lets contract 3 story, basmt., 37x128 ft. and 50x60 ft. rein.-con. brick convent addn., for Reverend Dominicaines Sisters, Berthierville.

LOW BIDDERS

Minn., Granite Falls — CHURCH—Granite Falls Lutheran Church, Rev. H. Hanson, Granite Falls, rejected bids July 22, stone, brick church, L. B. **$387,500.** Est. $350,000. Bard & Vanderbilt, 617 National Bldg., Minneapolis, archts.

Pa., Pottstown — DORMITORY — The Hill School, Pottstown, July 15, dormitory, from Warren B. Zern, Pottstown, **$300,000.** CD 6/21.

CONTRACTS AWARDED

Calif., Oakland—SCHOOL—Roman Catholic Archbishop of San Francisco, 1100 Franklin St., San Francisco, 8 classroom rein.-con. St. Anthony's Parochial School, to Pacific Coast Builders, 2530 18 St., San Francisco, **$306,603.** Bids 6/22. CD 6/17.

Conn., Wallingford—HOUSES—Thomas A. Laydon, State St., North Haven, 15 four-family frame houses, Hartford Turnpike, Owner builds. **$150,000.** CD 7/26.

Fla., Jacksonville—HOME—Childrens Home Society of Florida, 1649 Osceola St., childrens home incl. landscaping, walks, driveways, utilities, auxiliary bldgs., playgrounds, etc. on Spring Park Rd. off Atlantic Blvd., to replace existing facilities to O. P. Woodcock Co., 430 W. Monroe St., Zone 1, **$450,000.** Marsh & Saxelby, Hildebrandt Bldg., archts.

●Ill., Evanston—DORMITORY—Northwestern University, 607 Clark St., 4 story, basmt., steel, brick mens dormitory, Evanston Campus, to R. C. Wisboldt Co., 2353 S. Blue Island, St. Zone 8, **$1,225,000.** CD 5/26, under Public Bldgs.

N. J., Camden—RESIDENTIAL DEVELOPMENT—East Camden Bldg. Co., 2312 Michle St., residential development, Waldorf Ave., etc., separate contracts, **$250,000.** Arthur B. Gill, 111 N. 4 St., archt.

N. J., Lindenwold—RESIDENTIAL DEVELOPMENT—Overbrook Park Homes, Inc., c/o contractor, residential development, Overbrook Ave., to Guarantee Builders, Inc., Broadway and Mickle St., Camden, $250,000.

●N. J., Trenton—APARTMENT—Greenwood Building Corp., 114 Washington Court, Greenwood Village, apartment development Greenwood and Massachusetts Ave., separate contracts, **$1,000,000.** Isadore Naftali, 312 High St., Newark, archt.

●N. Y., New York—OFFICE—Uris Bros., 730 Fifth Ave., Zone 19, 25 story office on east side of Madison Ave. from 56 to 57 Sts. Owner builds. **$6,000,000.** CD 5/7/48.

N. Y., New York — SCHOOL—New York Assoc. for the Blind, 111 E. 49 St., Zone 17, office and training school 115 E. 59 St. to George A. Fuller Co., 597 Madison Ave., Zone 22. Approx. **$800,000.** Bids 7/26. CD 7/21.

●O., Cleveland—STORE—Bonwit Teller, Inc., 721 Fifth Ave., New York, N. Y., 5 story, brick specialty store remodeling, alterations, 1331 Euclid Ave., to Albert Higley Co., 2036 E. 22 St. Approx. **$1,200,000.** Awarded 7/25. Charles Anderson, c/o owner, archt. CD 10/2/47.

O., Columbus — APARTMENT—Town—Terrace Apartments, Inc., 515 E. Town St., 131 family apartment, to George Sheaf & Co., 449 Neil Ave. St., Approx. **$998,500.**

O., Euclid—RESIDENCES—Manec Constr. Corp., 295 E. 200 St., 36 two story residences, Priday Ave. between E. 210 and 215 Sts., separate contracts. Approx. **$380,000.**

●O., Fairview Park—HOMES—Bauer & Barrow, 26 Lorain Rd., Cleveland, 100 one story basmt. 28x33 ft. frame homes, W. 222, W. 223, W. 217, W. 224, W. 226 and W. 227 Sts., separate contracts. Approx. **$1,100,000.**

●O., Girard—STORE—Kronenberger Bldg. Co., 5839 Ridge Rd., Parma, 22 unit stores, bowling alley and parking area, on Route 422, 6 mi. west of Youngstown, separate contracts. Approx. **$1,000,000.**

O., South Euclid — RESIDENCES — Albar Constr. Co., 15606 Kinsman St., Shaker Heights, 21 two story, basmt., brick residences 3571-3954 Warrendale Rd. and 2057-65 Halsey St., separate contracts. **$258,000.**

Ore., Portland — APARTMENT — Regal Manor Annex Corp., Henry Bldg., two story 24 unit frame apartment at N. E. 21 and Clackamas Sts. to Realty Building Co., Henry Co., **$297,000.** Roald, Schmeer & Harrington, Spalding Bldg., archts. Awarded 7/26.

Pa., Abington—RESIDENTIAL DEVELOPMENT—Fred E. Mahon, 7150 Ogontz Ave., Phila., residential development, Silver Ave. etc., separate contracts. Approx. **$250,000.**

Pa., Chester — DORMITORY — Penn-Mel Corp., c/o Penna. Military College, 14 and Chestnut Sts., 2 dormitories, separate contracts. Approx. **$350,000.** Ralph P. Minich, c/o owner, archt.

Pa., Elizabethtown—NURSES HOME—Committe of Masonic Home, Elizabethtown, nurses home to D. S. Warfel, 440 N. Prince St., Lancaster, **$400,000.** Bids 7/29. CD 6/21.

Pa., Phila. — RESIDENCE — Mrs. Eleanor Widener Dixon, Spring Ave. and Serpentine Lane, Jenkintown, residence alterations and addns., 9002 Crefeld St., Estate to J. S. Cornell & Son, Inc., 1528 Cherry St., **$300,000.** Horace Trumbauer, 1511 Land Title Bldg., archt.

Pa., Phila.—CHURCH—Mother of Divine Grace Roman Catholic Church, 2617 E. Cambria St., church, to John P. Donovan, Inc., Lewis Tower Bldg., **$250,000.** Ricker & Axt, 6115 Hudson Ave., New York, N. Y., archts.

Pa., Phila. — RESIDENTIAL DEVELOPMENT—Rittenhouse Constr. Co., 1411 Walnut St., residential development, 57 St. and Elmwood Ave., separate contracts. Approx. **$250,000.**

Pa., Upper Darby—COMMUNITY CENTER, etc.—Upper Darby Jewish Community Center, McClatchy Bldg., community center and synagogue, to Louis Rosengarten, 6910 Market St., Approx. **$275,000.** CD 12/29.

R. I., Cumberland — HOUSING — Gadoury Bros., Inc., 120 Cumberland Hill Rd., Manville, fifty 1½ story, bsmnt., frame houses, Cumberland Hill Rd. Owner builds. **$450,000.** CD 7/28.

R. I., East Providence—TABERNACLE—Zion Gospel Tabernacle, Rev. Christine A. Gibson, pastor, 846 Broadway, 1 story, 80x125 ft., brick, steel, cinder block tabernacle, Gurney St. and Leonard Ave., to Agostini Constr. Co., 110 Meadow St., Pawtucket. Approx. **$250,000.** CD 2/9.

●**R. I., Providence**—DEPARTMENT STORE—Rotelli Enterprises, 217 Academy Ave., 2 story, bsmnt, 48x80x100x250 ft., 80,000 sq. ft. brick, steel, concrete department store, N. Main St. Owner builds. **$1,000,000.** E. Odenath, Roosevelt Blvd. and Adams Ave., Phila., Pa., archt. Sears Roebuck Co., lessee. CD 7/28.

●**Tex., Houston**—DWELLINGS—Brace & Carruth, 1087 W. 41 St., 200 addnl. dwellings, Sect. 6, Oak Forest. Owner builds. Approx. **$1,600,000.** CD 7/15.

Tex., Houston—DWELLINGS—North Houston Realty Co., Sterling Bldg., 50 low cost dwellings, Sect. 2, Greenwood Village. Owner builds. Approx. **$250,000.** CD 7/28.

Tex., Houston—HOUSING—Suburban Homes Constr. Co., 10122 Hardy St., housing. Owner builds. Approx. **$250,000.** CD 7/28.

Tex., Houston—DWELLINGS—Temple Lumber & Building Co., Polk Ave., 70 dwellings. Owner builds. Approx. **$750,000.** CD 7/28.

Tex., Houston — DWELLINGS—Townsend Constr. Co., 511 Taggart St., 10 high class dwellings, Royden Oaks. Owner builds. Approx. **$250,000.** CD 7/25.

Tex., Houston — DWELLINGS—Claude K. Williams, Wilson, Morris & Crain, 1917 Westheimer Rd., 100 dwellings. Owner builds. **$550,000.** CD 7/28.

●**Tex., San Antonio** — APARTMENT—Billy Mitchell Village, Inc., c/o Arthur Baird, San Pedro Ave., 408 unit garden apartment center, of 23 two story bldgs., 23 service bldgs. for laundry and storage, playgrounds, to C. L. Browning, Jr. & Southwest Homes Texas Co., 812 Insurance Bldg. Approx. **$4,000,000.** Awarded 7/30. CD 7/20.

Tex., Tyler—CHURCH—First Presbyterian Church, Tyler, church, to H. E. White, Box 845. **$824,000.** Mark Lemmon, 1210½ Main St., Dallas, archt. CD 12/17/47.

Va., Richmond—CHURCH—St. Bridgets Roman Catholic Church, 807 Cathedral Pl., church, to Doyle & Russell, 219 E. Broad St. **$250,000.** Gleason & Mulrooney, 1612 Market St., Phila., Pa., archts.

Tex., Houston—HOUSING—Hamilton Beasley, 2417 Blodgett St., addnl. housing proj. Owner builds. Approx. **$450,000.** CD 7/21.

Wis., Sheboygan—APARTMENT—Jacob Houmes & Robert Harmeling, 617 Erie Ave., 40x60 ft. apartment and 1 story, 24x180 ft. garage. Owner builds. Approx. **$300,000.**

Que., Jonquiere — PATRONAGE — Reverend Freres de St. Paul, Jonquiere, 2 story, 85x200 ft., rein.-con., brick patronage, to J. W. Flamond, Ltd., 504 Ste. Anne St., Approx. **$265,000.** Lamontagne & Gravel, 181 Racine St., Chicoutimi, archts. CD 4/24/46.

INDUSTRIAL BUILDINGS

BIDS ASKED

August 17

Que., Thetford Mines—DRYHOUSE—J. B. Gagnon, archt., 327 Notre Dame St., dryhouse, etc., for Bell Asbestos Mines Ltd., 7 Notre Dame St. $200,000. CD 4/15/45.

September 1

●**Mich., Lansing** — PLANT — State Journal, Grand and Lenawee Sts., 2 story, bsmnt., 165x200 ft. steel, concrete brick plant, $1,000,000. Morton L. Pereira, 100 W. Monroe St., Chicago, Zone 3, Ill., archts.

Bids Asked

Conn., Derby—BUS GARAGE—Connecticut Railway & Lighting Co., 55 Congress St., Bridgeport, 1 story, brick, steel, cinder blocks, bus garage, Main St., approx. $68,000. Fletcher Thompson, Inc., 211 State St., Bridgeport, archt.

●**Tex., Nordheim**—COMPRESSOR PLANT—Continental (Conoco) Oil Co. & Assoc., Ponca City, Okla., gas compressor plant, $1,000,000. CD 8/1.

CONTRACTS AWARDED

●**Ill., Kankakee**—PLANT—Kankakee Journal, 195 N. Schuyler Ave., Leslie C. Small, soon lets contract 2 story, brick, stone, steel newspaper plant, $1,320,000. Philip D. West, 185 N. Wabash, archt. Extended date, CD 7/19.

Pa., Erie—SERVICE—St. Vincents Hospital, 2420 Sassafras St., soon lets contract 1 story, bsmnt., 50x180 steel, brick, limestone service bldg. $300,000. Walter Monahan, 406 Marine Bank Bldg., archt. Harry Joyce, 616 Commerce bldg., engr.

Tex., Boerne—SERVICE STATION—Humble Oil & Refining Co., Humble Bldg., Houston, soon lets contract, service station, incl. area concrete paving, storage, work rooms, fueling sys., etc. $50,000.

Tex., Gonzales—SERVICE STATION—Humble Oil & Refining Co., Humble Bldg., Houston, soon lets contract, service station, incl. concrete area paving, service rooms, storage, $70,000.

Tex., Houston—SERVICE STATION—Humble Oil & Refining Co., Humble Bldg., soon lets contract, masonry service station. $75,000. CD 12/6.

Tex., Houston—SERVICE STATION—Humble Oil & Refining Co., Humble Bldg., soon lets contract, 1 story 8,500 sq. ft. brick on tile walls, steel doors field service station, concrete slab fdn. $100,000. Brown & Baer, 2017 W. Gray Ave., archts. Howard, John & Kelly, Scanlan Bldg., engrs.

Tex., San Antonio—SERVICE STATION—Humble Oil & Refining Co., Humble Bldg., Houston, soon lets contract, service station, incl. concrete area paving, work shop, storage, etc., San Pedro and Fresno Sts. $70,000.

Tex., Stockdale — SERVICE STATION — Humble Oil & Refining Co., Humble Bldg., Houston, soon lets contract, service station, incl. concrete area paving, service rooms, storage. $70,000.

Wis., Neenah—WAREHOUSE, etc.—E. F. Wieckert Lumber Co., 121 N. Commercial Ave., soon lets contract 1 story, 119x120 ft. and 54x136 ft. concrete blocks, steel warehouse and printing concrete fdn. and floors. W. H. Brown, 787 Boen St., Oshkosh, archt. W. E. Spade, 787 Bowen St., Oshkosh, engr.

Man., Transcona—GARAGE—Canadian National Rys, J. L. Charles, ch. engr., Winnipeg, Man., soon lets contract garage, $70,000.

LOW BIDDERS

La., Gretna—GATE HOUSE—Southern Cotton Oil Co., Gretna, July 21, 2 story, 100x150 ft. brick, stone gate house and office, two 18x32 ft. wings, from Perrilliat & Rickey Constr. Co. Inc., 1530 S. Rendon St., New Orleans. **$190,375.** CD 7/6.

●**Wis., Cassville**—POWER PLANT—Dairyland Power Co-operative, La Crosse, July 21, steam power plant, Prof. REA Wis. 64 La Crosse, from F. H. McGraw & Co., 58 E. Washington St., Chicago, Ill., **$1,165,568.** CD 7/14, under Unclassified.

CONTRACTS AWARDED

●**Calif., Torrance** — REFINERY — General Petroleum Corp., 108 W. 2 St., Los Angeles, "Coker" unit addn. to refinery, to Bechtel Corp., Box 156, Torrance. Approx. **$2,250,000.** M. W. Kellogs Co., 225 Broadway, New York, N. Y., engr.

●**Calif., Whitewater**—MILL—S. A. Guiberson, Jr., 2361 Hollyridge Dr., Los Angeles, cement mill, to McNeil Constr. Co., 5860 Avalon Blvd., Los Angeles. Approx. **$15,000,000.**

Fla., Tampa — POWER PLANT — Florida Power Corp., 101 5 St. S., St. Petersburg, power plant, to Kuljiam Corp., 1220 N. Broad St., Phila., Pa. Approx. **$500,000.**

Kan., Kansas City — PLANT — Wyandotte Laundry Co., 1039 Minnesota Ave., 1 story, bsmnt., 57x110 ft. concrete, brick, steel laundry plant bldg., to Will S. Rawlings Co., 1004 Forest St. Approx. **$68,000.** Gerard W. Wolf & Robert W. Royer, 121 W. 63 St., Kansas City, Mo., assoc. archts.

●**Idaho, Pocatello** — REPAIR SHOP — Pacific Fruit Express Co., Boise, car repair and cleaning shop, to Morrison-Knudsen Co. Inc., 319 Broadway, Boise. Approx. **$1,000,000.** CD 7/5.

Mo., St. Louis—TRUCK TERMINAL—Jones Truck Lines, Harvey Jones, pres., Springdale, Ark., brick, concrete truck terminal, on 132x190 ft. site, southwest corner 10 and Carr Sts., separate contracts. Approx. **$68,000.**

N. J., Vineland—SALES and SERVICE—East End Motor Co., 813 Landis Ave., auto sales and service bldg., to West Constr. Co., 14 W. Pine St., Audubon. **$75,000.**

Pa., Bristol—DISTILLERY — Hunter-Wilson Distilling Co., Inc., Green Lane, distillery addn., to Lombardi & Co., 345 N. 12 St., Phila. Approx. **$68,000.** CD 7/27.

Pa., Easton—WAREHOUSE—Dixie Cup Co., Easton, 1 story, 202x602 ft., brick, concrete warehouse, to Lauter Constr. Co., 112 S. 16 St., Phila. **$700,000.** Carson & Carson, 16 S. Broad St., Phila., engrs.

Pa., Phila.—WAREHOUSE, etc.—Merchants Warehouse, Inc., 10 Chestnut St., warehouse and office, to Charles H. Schwertner & Son, Inc., 1220 Hamilton St. Approx. **$68,000.**

R. I., Pawtucket—MACHINE SHOP—Blackstone Valley Gas & Electric Co., High St., 2 story, 50x50 ft., brick, steel machine shop, High St., to A. F. Smiley Constr. Co., 115 Trenton St. Approx. **$70,000.** Monahan & Meikle & Johnson, 255 High St., archts.

Tex., Dallas—SHOP—Ben Griffin Auto Co., 1601 S. Erway St., reconstructing 2 story auto repair shop to Cowdin Bros., 411 S. Haskell St. Approx. **$85,000.**

Tex., Rio Grande City—GASOLINE PLANT—Continental Oil Co., Ponca City, Okla., natural gasoline plant expansion 20 mi. north of here. Own forces. Approx. **$1,350,000.** CD 5/23.

Tex., Sugarland—PACKING—Imperial Sugar Co., Sugarland, remodeling 100x130 ft. masonry packing bldg., air-conditioning, to Charles R. Baum & Assoc., 707 Hughes St., Houston. Approx **$90,000.** Truman B. Wayne & Assoc., 1705 W. Gray Ave., Houston, engrs. and archts.

Utah, Salt Lake City—GARAGE—Broadway Garage, Inc., 50 W. Broadway, public garage annex, to Vincent-Peterson Co., Dooly Bldg. Approx. **$75,000.**

Que., Montreal — FACTORY — T. H. Estabrooks Co. Ltd., 49 Mill St., Saint John, N. B., factory, Park Ave., to Anglin Norcross Quebec Ltd., 892 Sherbrooke St. W. Approx. **$500,000.** Fetherstonhaugh & Assoc., 660 St. Catherine St. W., archts.

Que., St. Hyacinthe—LAUNDRY—Reverend Sisters of the Presentation, 650 Sirouard St., St. Hyacinthe, 2 story 52x110 ft., brick, concrete laundry to L. Vadeboncoeur, 2330 St. Anne St. Approx. **$75,000.** S. A. Cyr, 4395 St. Andrew St., Montreal, archt.

UNCLASSIFIED

BIDS ASKED

August 16

Missouri—RURAL DISTRIBUTION LINES—Cuivre River Electric Co-operative, John W. Schaper, pres., Troy, 285.82 mi. 7.2 KV rural distrib. lines, Lincoln and Pike Counties, Proj. 57E, Lincoln, Sect. 1 and 260.06 mi. 7.2 KV rural distr. lines, and 32.65 mi. conversions, St. Charles and Warren Counties, Proj. 57E, Lincoln Sect. 2. Plans deposit $25. Drazen & Assoc., 8135 Forsyth Blvd., Clayton, St. Louis, Zone 24, engrs. Bids 7/22 rejected, LB. **$454,235,** Sect. 1 and LB. **$470,382,** Sect. 2, CD 7/6.

✦**Arizona-Nevada**—STRUCTURAL STEEL—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnish and del. f.o.b. cars at shipping point or f.o.b. Kingman (Louise) Ariz., mis. structural steel for bus structure, hatch covers and crane runway for Davis Power Plant Davis Dam Proj. Spec. 2744. L. N. McClellan, ch. engr.

British Columbia—DRILLING—C. E. Webb, engr., 744 W. Hastings St., Vancouver, exploratory foundation investigation, incl. churn drilling, diamond core drilling, etc., Kootenay River, for Dominion Govt., Hunter Bldg., Ottawa, Ont. **$100,000.**

SOON LETS CONTRACT

Montana—RURAL DISTRIBUTION LINES—Sheridan County Rural Electric Co-operative, Medicine Lake, soon lets contract 326.7 mi. rural distr. lines, Sheridan and Roosevelt Counties, $350,000. CD 10/14.

LOW BIDDERS

✦**La., New Orleans**—AIR CONDITIONING SYSTEM—U. S. Eng., foot of Prytania St., rejected bids July 8, installing 175 ton summer air-conditioning sys. in engineering bldgs. Inv. No. 49-340. CD 6/21.

Nebraska—RURAL DISTRIBUTION LINES—Butler County Rural Public Power Dist., David City, July 20, 367.7 mi. rural distr. lines, Butler, Lancaster, Saunders and Seward Counties, from Crawford Electric Co., North Platte. **$352,108.** Bids 7/20. CD 7/6.

North Carolina — RURAL DISTRIBUTION LINES — Burke-McDowell Electric Membership Corp., Morganton, July 14, 255 mi. rural distr. lines, Burke, McDowell, Caldwell and Rutherford Counties from Hunter Electric Co. Inc., 221 W. 2 St., Charlotte, **$298,969.** CD 7/7.

CONTRACTS AWARDED

Ariz., Phoenix—FIRE ALARM SYSTEM—City, First Ave. and Washington St., fire alarm system, to Gamewell Co., Newton Upper Falls, Mass., **$678,779.** CD 7/19, under LB.

Kansas, Chanute — DRIVE-IN THEATRE — Ray Walsh & Assoc., c/o Ray Walsh, Main St. Theatre, Chanute, drive-in theatre, 2 mi. north of city, separate contracts. Approx. **$60,000.**

Ky., Campbellsville—DRIVE-IN THEATRE —Sinclair Syndicate, c/o Mrs. E. Gorten, Sinclair, drive-in motion picture theatre incl. screen tower, projection and concession structures, walks, drives, ramps, in-a-car speakers, etc., to Otto Marcum, Campbellsville, Approx. **$75,000.**

Missouri—RURAL DISTRIBUTION LINES—Gascosage Electric Co-operative, Luther A. Riddle, mgr., Dixon, approx. 164 mi. rural distr. lines, etc. labor and material Sects D and E, (Mo. Proj. 68 D and E, Pulaski) to L. P. & H. Constr Co., Linton, Ind., **$206,634.** Bids 7/20. CD 7/13.

Mo., Henrietta — DRIVE-IN THEATRE — Frank G. Weary, c/o Farris Theatre, Richmond, drive-in theatre, separate contracts, **$100,000.**

North Carolina—RURAL DISTRIBUTION LINES—Four County Electric Membership Corp., J. J. Malpass, pres., Burgaw, 306 mi. rural distr. lines, Sampson, Duplin, Bladen and Pender Counties to T. J. Sweatmunk Electric Constr. Co., 1731 Harden St., Columbia, S. C. **$370,929.** Bids 7/6. CD 6/30.

✦**Wash., Richland** — ELECTRICAL CONSTRUCTION—U. S. Atomic Energy Comm., 1901 Constitution Ave. N. W., Wash., D. C., electrical construction in business district, to Howard P. Foley Co., 240 E. 1 South St., Salt Lake City, Utah. **$39,852.**

Ont., Welland — ROLLER RINK—G. Tanguay, 58 Duncan St., 1 story 62x112 ft., concrete, steel roller rink, Hangar St. to G. Lamarre, 64 Cozy St., Approx. **$100,000.** A. B. Scott, 112 Division St., archt.

●**Que., Montreal**—TUNNELS—Dpt. Transport, Hunter Bldg., Ottawa, Ont. and City of Montreal, 488 Ft. St. Remi St. Subway vehicular tunnel under Lachine Canal, to Atlas Constr. Co., Ltd., 4785 St. Catherine St. W., Approx. **$2,408,857.** Bids 7/13. CD 7/19, under LB.

CONSTRUCTION REPORTS—Second Section

WATER SUPPLY

BIDS ASKED

August 15

Md., Hyattsville—Washington Suburban Sanitary Comn., Hamilton St., 1,500 curb coxes boxes, fifty 2 to 3 ft. extension curb cock boxes; adv. ENR 8/11.

August 17

Md., Baltimore—Mayor & City Council, City Hall, excavation, back filling, approx. 4,500 ft. 36 in. c.i. watermain, appurtenances, Ensor Street Transmission Water Main. Plans deposit $10. Leon Small, 503 Municipal Bldg., water engr.

August 24

Calif., Oakland—East Bay Municipal Utility Dist., 512 16 St., 30 m.g. concrete lined open Seneca Reservoir, Spec. LS-473, approx. $30,000. John Longwell, 512 16th St., engr. CD 12/15/44.

September 14

Tenn., Nashville—E. B. Smith, city purch. agt., City Hall, high service suction, low service discharge and appurtenances at the water filtration plant and pumping station. Plans deposit $25. The Chester Engineers, 210 East Park Way, Pittsburgh 12, Pa., engrs.; adv. ENR 8/11. CD 1/17.

LOW BIDDERS

Mass., New Bedford—City of New Bedford, Water Bd., Municipal Bldg., July 15, Quittacus Pumping Station improvs., Lakeville Pond, piping equip., appurtenances, from J. F. McGlame Co., 14 Boylston Pl., Brookline, $132,800. Bids 7/1 rejected. CD 7/13, under LB.

Tex., Greggton—City, City Hall, July 28, water sys., concrete foundation for water tank, pump, unit, c. i. lines, storage, from Ferguson Constr. Co., P. O. Box 5421, Dallas, $105,145. CD 7/13.

Tex., Houston—City, City Hall, 900 Brazos St., July 27, 11 well pumping unit, from Layne-Texas Co. Ltd., 5402 Lawndale St., $115,750, est. $190,000; 5 m. gal. steel water reservoir for Heights Pumping Plant, from A. J. Martin, 5112 Laurel St., $93,473, est. $110,000. Frank Baldwin, city engr. CD 7/30/44.

CONTRACTS AWARDED

Ala., Phenix City — City, WW imprvs., addns., to Schley Gordy, 1510 Hilton Ave., Columbus, Ga., $146,392. Bids 7/22. CD 5/15.

Kan., Quindaro (R. F. D. from Kansas City)—Village, Village Hall, WW extens., to Tetyak & Young Co., 714 E. 95 St., Kansas City, Mo., $123,260. C. A. Haskins, Finance Bldg., Kansas City, Mo., engr. CD 6/30.

La., Opelousas—City, City Hall, WW imprvs., to E. N. Murray, Buena Vista, Ga., $117,856. Bids 7/13. CD 7/25, under LB.

Mass., Topsfield—Town, Hall-Water Comrs., Topsfield, water distr. sys., to De Mascio Bros., 26 Everton St., Dorchester, $46,032. Bids 7/1. Awarded 7/19.

SEWERS, WASTE DISPOSAL

BIDS ASKED

August 18

Tex., San Antonio — City, Jimmie Knight, street coumr., City Hall, Sect. 1, sewage plant improvs., enlargement, $100,000. H. R. F. Helland, Frost Bank Bldg., engr. CD 12/15/47.

August 22

Ga., Atlanta — Fulton Co., Comrs. of Rds. Revenue, Courthouse, Outfall Sewer projects S-15, S-29 and S-28. Plans deposit $15.

LOW BIDDERS

Calif., Grass Valley — City, City Hall, July 25, sewage treatment plant and collection sys., from Ke-Ston Constr. Co., 3622 E. Slauson Ave., Maywood, $229,300. CD 8/3. (**Correction**—contractor).

Ind., Indianapolis—Bd. P. Wks., City Hall, Aug. 1, York St. Sewer, from Columbia Constr. Co., 2108 Columbia Ave., $117,125. Est. $140,000. CD 7/15.

Minn., St. Louis Park—Village, J. Justad, clk., Village Hall, July 25, sanitary sewers, from Phelps-Drake Co., 1415 S. E. 8 St., Minneapolis, $92,359. CD 7/7.

N. M., Raton—City City Hall, July 27, sewage treatment plant, appurtenances, from Lippert Bros., 2800 N. Santa Fe St., Oklahoma City, Okla., $208,456. Est. $220,000. CD 7/13.

New York — President Queens Boro, 120-55 Queens Blvd., Kew Gardens, Zone 15, July 28, sewers, 141 Ave., 226 St. to 230 Pl., 141 Ave., 227 St. to 230 Pl., 227 St., 141 to 137 Aves., 228 St., 141 to 137 Aves., 230 St., 141 to 138 Aves., Type A, from Mannino & Pittaxi, Inc., 159, 82 St., Brooklyn, Zone 27, $125,745; Type B, from John P. Picone, 102-09-217 Pl., Queens Village, $109,944***90 Aves., 197 to 196 Sts., 196 St., 90 to Hillside Aves., Hillside Ave., 196 to 197 Sts., 197 St., Hillside to Dunton Aves., Dunton Ave. and Marengo St., from F. Evangelista & Son Constr. Co., Inc., Woodside, $56,580. CD 7/20.

N. Y., Buffalo — Bureau Contracts & Accounts, Albany, Aug. 3, sewer and water lines at Residence Halls and attendant facilities, New York State College for Teachers, from George E. Schank, 444 Vermont St., $51,921.

O., Washington Court House—City, July 25, 2 high speed filtering tanks and primary treatment beds for sewage disposal sys., from Christopher Constr. Co., 40 W. Gay St., Columbus, $89,976. Est. $92,000.

CONTRACTS AWARDED

Calif., Santa Cruz—Santa Cruz Co., Courthouse, vitr. clay and wrought iron interceptor trunk line sewer, Freedom Annex Sewer, to Granite Constr. Co., Box 900, Watsonville, $54,006. Bids 7/23.

Ga., Thomson — City, sanitary sewer imprvs., Div. 1, sewer lines, to Ridlehuber & Co., Greenwood, S. C., $151,419; Div. 2, sewage disposal plant, etc., to R. A. Bowen, Macon, $81,274. Bids 7/26. CD 6/29.

Ky., Louisville—Louisville & Jefferson Co. Metropolitan Sewer Dist., 414 W. Jefferson St., Manslick Ave. main sewer, Contr. 6s-A, to Charles E. Cannel Co., 2138 S. Floyd St., $202,508. Bids 7/26, awarded 7/29. CD 7/6.

●**N. Y., New York** — Dpt. P. Wks., Municipal Bldg., Zone 7, Contr. 1, structures; Contr. 2, plumbing for Gansevoort Destructor Plant; electrical work, Contr. 3, heating; Contr. 4, plumbing Waterfront Disposal Station, foot of Bloomfield and Ganseevoort Sts., to J. Rich Steers Co., 17 Battery Pl., Zone 4, $1,180,000. Bids 7/18. CD 7/21, under LB.

●**O., Columbus**—City, Elmer A. Keller, dir. Pub. Service, sewage treatment plant, to Christopher Constr. Co., 40 W. Gay St., $1,124,557. Bids 6/21. CD 6/14.

BRIDGES

BIDS ASKED

STATE HIGHWAY LETTINGS

August 16	**August 23**
Iowa	**Indiana**
Virginia	**August 24**
West Virginia	**California**
August 19	**New York**
Washington	**September 9**
	Arkansas

August 22

†**Alaska**—Bureau Pub. Roads, General Services Admin., Federal and Territorial Bldg., Juneau,

bridge on Seward Hy., Chugach National Forest, Proj. 3-E3, 14. Plans deposit $10.

LOW BIDDERS

Florida—State Rd. Dpt., Tampa, July 28, repairing Non Crossing Bridge over Indian River on Rd. A1A Proj. 9406-105, St. Lucie Co., from Powell Bros., Inc., Fort Lauderdale, $92,121. CD 7/18.

Louisiana—State Hy. Dpt., Baton Rouge, July 27, ten 24 ft. rein.-con. deck girder span Bayou Plaquemine Bridge, grading, grav. surf. 0.559 mi. approaches State Rd. 376, S. P. 220-01-02, Acadia Parish, from H. L. Allen, Elton, $73,711***gravs. base course bit. surf. 0.69 mi. approaches, ten 40 ft. I-beam span Bayou Deloutre Bridge, State Rt. 11, S. P. 69-03-05, Union Parish, from Forcum James Co., 1565 Choctaw Dr., Baton Rouge, $105,333. CD 7/7.

Maine—State Hy. Dpt., Augsuta, July 27, Penobscot River Bridge, substructure, between Lincoln and Chester, Penobscot Co., from W. H. Hinman, Inc., North Anson, $61,085. CD 7/18.

●**Maryland**—State Hy. Dpt., Baltimore, received no bids Aug. 2, Piers 23 to 28 inclusive Chesapeake Bay Bridge, Contr. CBB 1a-s-87, Stevensville and Sandy Point, Queen Anne and Anne Arundel Counties, Alternate 1, $7,756,826 with stone riprap and $7,872,656 with gravel blanket. CD 6/29.

Maryland—State Hy. Dpt., Baltimore, filled causeway, Chesapeake Bay Bridge, Contr. CBB 1-7-87, Stevensville and Sandy Point, Queen Anne and Anne Arundel Counties, Alternate 1, from C. J. Lagenfelder & Son, Inc., 8301 Pulaska Hy., Baltimore, $354,429. Est. $332,716. CD 7/26, under LB.

Missouri—State Hy. Dpt., Jefferson City, July 29, from R. B. Potashnick, Cape Girardeau, two 35 ft. one 51 ft. continuous I-beam span bridge over St. Louis and San Francisco R. R., Rt. 61, Proj. FG 1283 (3) A, road from Cape Girardeau Scott Co. line, Sta 1304 Plus 16, $91,761; one 33 ft. I-beam and plate deck spans, 1,472 ft. long, over D. D. 2 headwater diversion Channel Rt. 61, Proj. FI 289 (6)A, road from Cape Girardeau-Scott Co. line, Sta. 1342 plus 09, $464,002; two 50 ft. one 60 ft. continuous I-beam span bridge over Little Ramsey Creek, Rt. 61, Proj. FI 289 (4), road from Cape Girardeau-Scott Co. line, Sta 1288 plus 71 $60,699, all foregoing Cape Girardeau Co***from Universal Bridge Co. Inc., Kansas City, Mo., two 60 ft. and two 70 ft. continuous I-beam span bridge over Castor River, D. D. Rt. SB (129), Proj. ERS 20 (1), road from Rt. SW north to Bynumville, Sta. 423 plus 38, Chariton Co., $92,804***from Davis Constr. Co. Inc., Boonville, one 40 ft. and three 45 ft. rein.-con. deck girder span bridge over Beaver Dam Creek, Rt. 54, Proj. U 126 (11), Mexico Sta. 8 plus 94, Audrain Co., $87,890***from Midwest Precote Co., Randolph St., Kansas City, Mo., two 52 ft. and two 62 ft. continuous I-beam span bridge over Salt River, Rt. SN Proj. S 604 (1)-A, road from Macon Co. line easterly to Novelty Sta. 108 plus 26, Knox Co., $53,038. CD 7/20.

Mo., St. Louis—City, Frank J. McDevitt, pres. Bd. Pub. Service, 304 City Hall, 12 and Market Sts., Zone 3, July 26, furnishing, framing treating, del. etc. bridge timbers for use on railway deck of the Douglas MacArthur Bridge across Mississippi River between St. Louis, Mo. and E. St. Louis, Ill from Southern Wood Preserving Co., Postoffice Station "A", Atlanta, Ga., $89,144. Est. $112,000. CD 6/28.

New York—Dpt. Pub. Wks., Albany, Aug. 3, painting 14 bridges, R. C. 49-89, Broome, Delaware, Schoharie and Sullivan Counties, from Maintenance Services, Inc., Binghamton, $50,752 est. $73,000***painting 18 bridges, R. C. 49-83, Orange, Rockland and Ulster Counties, from Creative Painting Co., South Rd., Milton, Marlboro, $63,325 est $82,000*** bridge 0.4 mi. Presho-Lumber City County Road No. 73, FA 8S 49-21, Steuben Co., from Howard & Sprague, 656 State St., Binghamton, $320,630 est. $355,000***0.6 mi. separation grades of Erie R.R. with Middletown-Monigomery S. H. 499, FG RC 49-87, RC, 49-88, Orange Co., from John Arborio, Inc., W. Cedar St., Poughkeepsie, $187,380 est. $225,000. CD 7/15.

CONTRACTS AWARDED

Fla., Miami—Dade Co., Miami, Palmer Lake Bridge, to W. T. Price Dredging Corp., 3200 S. W. 27 Ave., $54,600. Bids 7/12. CD 6/22.

Iowa—State Hy. Dpt., Ames, 12 rein.-con. box culverts, extens., 12x75 ft. concrete arch extens., 26x100 ft. deck plate girder bridge, various locations, Iowa 14 from Iowa 223 south to southwest corner Sect. 34-81-19, F 764 (5), Jasper Co., to A. Olson Constr. Co., Waterloo, $58,210. Bids 7/19. CD 7/8.

Miss., Gulfport — Harrison Co., Gulfport, Bayou Portage Bridge, to W. R. Fairchild, Hattiesburg, $109,961. Bids 7/19. CD 7/1.

●**New York**—Bureau Contracts & Accounts, Albany, concrete, steel viaduct 0.3 mi. Major Deegan Expressway from E. 157 St. to Sedgwick Ave. Station of IRT subway, Bronx Boro, to Johnson, Drake & Piper, Inc., 86 Trinity Pl., New York, Zone 6, $2,792,401. (Error in tabulation on low bid). CD 6/10, under LB.

Ohio—State Hy. Dpt., T. J. Kauer, dir., Columbus, Zone 15, replacing railing on Bridge Nos. HA-25-108, HA-25-111, HA-25-112 and HA-25-113 retaining walls and stairways, 0.85 mi., Hamilton Co., to J. H. Prench, D. & M., A. J. H. French Constr. Co., 4625 W. Fork Rd., Cincinnati, $54,210. Est. $63,520. Bids 7/19, awarded 7/23.

South Carolina—State Hy. Dpt., Columbia, 801 ft. rein.-con. structural steel, treated timber bridge, earth approaches 0.701 mi. Route 53, S. C. Docket 2143.220, Florence and Sumter Counties, to F. A. Triplett, Inc., Chester, $72,718. Bids 7/19. CD 7/14.

Tex., Houston—Southern Pacific Co., E. E. Mayo, ch. engr., 65 Market St., San Francisco 5, Calif., elimination grade curves on main line, force account. $325,000. CD 1/11/46.

West Virginia—State Road Comn., Charleston, 3 continuous steel I-beam spans, two at 84 ft. one at 110 ft. on concrete sub-structure Glatto Overhead Bridge 165x over N. & W. R.R. over Middle Creek Fork (W. Va. Route 10), FAP F-308 (1), Mercer Co., to Monty Bros., St. Albans, $109,849. Bids 7/19, awarded 7/25. CD 7/8.

STREETS AND ROADS

BIDS ASKED

STATE HIGHWAY LETTINGS

August 16	**August 19**
Iowa	**Kansas**
Massachusetts	**Minnesota**
Ohio	**Washington**
Virginia	**August 24**
West Virginia	**California**
August 17	**New York**
Rhode Island	**August 25**
August 18	**New Jersey**
Kansas	**September 9**
	Arkansas

August 22

†**Alaska**—Bureau Pub. Roads, General Services Admin., 419 Federal and Territorial Bldg., Juneau,

clearing, grubbing, grading, drainage 2.06 mi. Seward Hy. in Chugach Natl. Forest, Proj. 3-A9. Plans deposit $10. CD 8/17/45.

August 23

Calif., Camarillo—State Div. Architecture, P. Wks. Bldg., Sacramento, roadwork, sidewalks, and drainage facilities at State Hospital. Plans deposit $25. Anson Boyd, Sacramento, state archt.

O., Toledo—City, City Hall, resurf., wid'n. Huron St. and Upton Ave. Approx. $50,000; resurf. Airline, Detroit, Lakeshore and Whiting Aves., Dunham, Emery, Ralph and Storrs Sts., Shasta Dr. $100,000. Plans deposit $10 each. Burton Mac Ritchie, city engr. CD 10/14/48.

August 24

Pennsylvania—Pennsylvania State Turnpike Comn., U. N. 4 St., Harrisburg.

Dauphin Co.—grading, drainage, structures, paving 3.24 mi. Sect. 22-B, in Steelton Boro, Highspire Boro and Lower Swatara Twp.

August 25

†**Idaho**—Bureau P. Rds., General Services Admin., 609 Bannock St., Boise.

Kootenai Co. — grading 0.842 mi. North Pacific Hy., Kootenai National Forest, Proj. 7-A6, Unit 1. L. M. Huggins, dist. engr.

August 31

†**Idaho**—Bureau Reclamation, Dpt. Interior, Cascade, earthwork, structures, surf. and relocation county roads, Cascade Reservoir,

Payette Div., Boise Proj., approx. 12 mi. northwest of Cascade, Valley Co., Spec. 2752.

September 2

†Pennsylvania—Bureau Pub. Roads, General Services Admin., Post Office Bldg., Liberty St. and 2 Ave., Warren.

Elk and Forest Counties—construct 3.414 mi. Pennsylvania Forest Hy. Proj. No. 13-B. Plans deposit $10, adv. ENR 8/11.

LOW BIDDERS

California—State Div. Hys., Sacramento, July 27, plant mix on untreated rock surf. 3.9 mi. Manning Ave. between U. S. Hy. 99 and Indianola Ave., Fresno Co., from Oilfield Trucking Co. and Phoenix Constr. Co., Box 906, Bakersfield, **$133,241**; plant mix on cement stabilized crusher run surf. 1.2 mi. at Zamora, Yolo Co., from Fredericksen Brothers, 1259 65 St., Emeryville, **$128,432.** CD 7/5.

Colo., Denver — City and Denver Co., City and County Bldg., July 29, street improv., Dist. 164, from Hutchison Constr. Co., 4101 E. Evans Ave., **$249,948.** Est. $380,190. CD 7/20.

D. C., Wash.—Distr. Comrs., District Bldg., July 27, resurf. Massachusetts Ave. N. W., from 2 St to 7 Sts. N. W., from Highway Constr. Co., P. O. Box 4437, **$81,428.**

D. C. Wash—Dist Comrs., July 15, resurf. roadways of New York Ave. N. W., 9 to 14 Sts., from Corson & Gruman, Co., 33 and K Sts. N. W., Wash., Zone 7, **$92,845.**

Florida—State Rd. Dpt., Tampa, July 28, paving, grading, 1 bridge 1.065 mi. State Rd. 56, at Lake Jesup Bridge, Proj. S-8-4 (3), Seminole and Volusia Counties, and grading, stabilizing, constr. rock base with Types 2 and 3 surf. curb and gutter, small drainage structures, State Rd. 58, Proj. S-137 (3), Hardee Co., from Polk Constr. Co., Lakeland, **$182,639** and **$117,693** respectively***grading, paving 0.766 mi. State Rd. 71, Blountstown, Proj. S-145 (3), Calhoun Co., and grading, paving, 1 bridge 6.321 mi. State Rd. 15 between Library and Lake Ave., Proj. S-245 (1) Walton Co., from James H. Craggs Constr. Co., Ocala, **$64,273** and **$107,974** respectively***grading, paving 1 bridge 7.517 mi. State Rd. 65 between Apalachicola National Forest and Liberty Co. line EHP 14-C1, Franklin Co., from T. Drew Branch Constr. Co., Sumatra, **$158,873*****grading, paving 6.634 mi. State Rd. 5 between Ft. Pierce and point north Proj. FI-002(4) (14) St. Lucie Co., from Jacksonton Constr. Co., Orlando, **$245,791*****grading, stabilizing, constr. rock base Types 2 and 3, surf., small drainage structures, 6.394 mi. Proj. F-022-2 (1) and F-031-1 (3), Hernando Co., from Cone Bros. Constr. Co., Caesar Ave. and Cumberland St., Tampa, **$248,828.** Cancelled bids to have been opened July 28, grading, paving 7.572 mi. from Hillsboro Canal Bridge and extens., south Proj. 8605-108, Broward Co. CD 7/18.

†Idaho — Bureau P. Roads, General Services Admin., P. O. Box 1559, Boise, July 28, clearing, grubbing, grading, draining 5.534 mi. Strawberry-Sharon Hy., Cache National Forest, Proj. 42-A2, Franklin & Oneida Counties, from Duffy Reed Constr. Co., Twin Falls, **$155,049.** CD 7/20.

Idaho — State Hy. Dpt., Boise, roadbed, drainage structures, crushed grav. surf. 11.209 mi. Old Oregon Trail, east from Soda Springs, Caribou and Bear Lakes Counties, from Hall Constr. Co., Twin Falls, **$354,757.** est. $376,608; roadbed and drainage structures, crushed grav. surf. 2.861 mi. Sanders Rd. west of Emida, Benewah Co., from Ralph Larsen & Applegate, Yardley St., Spokane, Wash., **$51,737** est. $50,437.

Idaho, Boise — City, City Hall, grading, oiling 104 blocks city streets, from Morrison-Knudsen Co. Inc., 319 Broadway, **$118,070.**

Garden City, Ada Co., c/o Ralph B. Cordele, July 27, street paving and storm sewers, from Jack Clark Co., c/o owner, **$169,491.**

Maryland—State Hy. Dpt., Baltimore, July 26, grading 2.961 mi. Rt. 243, Constr. No. SM 351-515, St. Marys Co., from Empire Constr. Co., 31 S. Calvert St., Baltimore, **$185,768.** CD 7/20.

Massachusetts — Commonwealth of Massachusetts, Dpt. Pub. Wks., Boston, July 26, highway and bridge work, Holden, from Frank B. Crowley, 326 Merriam Ave., Leominister, **$117,-999.** CD 7/13.

Mass., Fitchburg—City, Pub. Wks. Dpt., City Hall, July 22, street constr. from P. J. Keating Co., 336 Main St., **$50,845.** CD 2/21/46.

Minnesota—State Hy. Dpt., St. Paul, July 22, c. conc. 0.3 mi, Austin, S. P. 5069-63 (TH 218-40) U. S. 384 (10), from Woodrich Constr. Co., Hopkins, **$76,625.** CD 7/13.

Missouri—State Hy. Dpt., Jefferson City, July 29, grading 0.526 mi. Rt. 61, road from Cape Girardeau-Scott Co. line, Proj. FGI 289 (5)a, and grading 2.600 mi. Rt. 61 road from Cape Girardeau-Scott Co. line, Proj. FI 289 (6)a, Cape Girardeau Co., from R. B. Potashnick, Cape Girardeau Co., **$91,761** and **$143,933** respectively***c. conc. 3.964 mi. Rt. 66, from Springfield to Stafford, Sect. 19A and c conc. resurf. 3.199 mi. Rt. 66 road from Springfield to Stafford Sect. 18A, Greene Co., from Masters-Jackson Paving Co., Woodruff Bldg., Springfield, **$116,894** and **$94,483** respectively*** grading, surf. 4.506 mi. Rt. 76, road from Bradleyville east towards Brown Branch Proj. S 74 (3), Taney Co., from Frank P. Chiles Constr. Co., Harrisonville, **$59,240.** CD 7/20.

New Hampshire—State Hy. Dpt., Concord, July 29, surf. tr. gravel 2.291 mi. and 3 span 100 ft. continuous rein.-con. T-beam bridge in towns of Pembroke and city of Concord, Merrimack Co., from Manchester, Sand, Gravel & Cement Co., Inc., 839 Elm St., Manchester, **$156,522;** road mix surf. 1.928 mi. N.H. Route 16 in town of Bartlett, Carroll Co., from R. G. Watkins & Son, Inc., Mill Yard, Amesbury, Mass., **$174,137.** CD 7/20.

N. J., Trenton—City, City Hall, July 28, repaving Genesee St., from Union Paving Co., New York Ave., Trenton, **$107,153;** repaving N. Clinton Ave., from Agabiti Brothers, 125 Swan St., **$73,969;** repaving Tyler St., from Kingston Bituminous Products Co., Kingston, **$52,633.** Joseph English, City Hall, city engr.

●New York — Dpt. Pub. Wks., Albany, Aug. 3, 0.17 mi. Major Deegan Expressway, Contr. 5AA (167 St. to Depot Pl), FA MDE 49-5, Bronx Co., from Charles F. Vachris, Inc., 827 Remsen Ave., Brooklyn, **$443,778** est. $550,-000***0.38 mi. East Church St.-County Road 488, FA SS. 49-15, Erie Co., from W. F. Hendrich, Inc., Sidway Bldg., Buffalo, **$180,705** est. $204,000***0.4 mi. Delaware Ave., Buffalo City, Tacoma to Kenmore Aves., FA. C. 4905, Erie Co., from Rock Asphalt, Inc., 223 Erie St., Buffalo, **$237,507** est. $239,000***4.38 mi. Walworth-Macedon-County Line, FA SS. 49-19, Wayne Co., from O. W. Winkelman Co., Heffernan Bldg., Syracuse, **$274,520** est. $349,-000***5.71 mi. Old Military Turnpike County Rd., FA SS. 49-18, Clinton Co., from Dan-Bar Constr. Co. Inc., 220 Pulawski St., Syracuse, **$573,527** est. $620,000***5.06 mi. Griswold Street County Road No. 905A, FA SS. 49-24, Niagara Co., from Norman K. Glover, Oakfield, **$194,346** est. $246,000***cancelled bids to have been opened Aug. 3, imprv. 11.02 mi. Jericho Turnpike, S.H. 5008, 5111 and 5112, FA R.C. 49-74, Suffolk Co., will re-advertise. CD 7/15.

North Dakota—State Hy. Dpt., Bismarck, July 29, c. conc., storm sewer, etc. 0.517 mi. U. S. Hy. 81 in Fargo, FAP No. U-1 (7), Cass Co., from Northern Imprvt. Co., Fargo, **$194,488** rejected bids July 29, b. conc. surf., etc. 8.364 mi. State Hy. 5 from Bottineau to Hamilton, FAP No. F-366 (6), Pembina Co., LB. **$228,822.** CD 7/14.

Tex., Houston—Harris Co., Courthouse, July 25, asph. paving and road construc., from E. Montgomery Rd., from Walter A. Smith, 615 Valasco St., **$85,805.** Est. $87,964. CD 7/19.

Tex., Luling—City, Aug. 1, street imprvs., asphalt surf., concrete curbs and gutters, from McKenzie Constr. Co., 2800 Transit Tower, San Antonio, **$182,400.** Est. $150,000. Bids 8/1. CD 7/19.

●Washington—Bureau of Public Roads, General Services Admins., Broadway-Oak Bldg., Portland, Ore., July 26, clearing, grubbing, grading, draining South Fork Gold Creek Rd., Chelan National Forest, Washington Forest Development, Rd. Proj. 310-A, from Russell Oliver, Coburn, Ida., **$65,916.** CD 7/18.

CONTRACTS AWARDED

Calif., Oakland—Bd. Educ., 1025 2 Ave., grading, paving at various schools, to Ariss-Knapp Co., 961 41 St., Oakland, Gallagher & Burk, 900 73 Ave., Oakland, J. Henry Harris, 2657 9 St., Berkeley, and Independent Constr. Co., 549 Fell St., San Francisco, **$66,494.** Bids 7/26. CD 7/18.

Conn., Hartford—City, Div. Purchase, City Hall, paving Park St., Orange St. to Prospect Ave, Intersection of Wilson and Trumbull Sts., Fern St. between Girard and Prospect Aves., to Edward Balf Co., 190 Huyshoppe Ave., **$58,418.** CD 3/11.

Conn., West Haven—Town Bd. Selectmen, bit. Campbell Ave., Main to Beach, to Pavements, Inc., 110 Whitney Ave., New Haven, **$73,449.**

Ia., Audubon—City, City Hall, resurf. streets and alleys, to Olson Constr. Co., 819 Plymouth St., Sioux City, **$87,000.**

Miss., Forest—City, City Hall, street paving, to Russell & Blain, Mt. Olive, **$76,325.** Bids 7/19. CD 7/6.

Mo., St. Louis — Calvary Cemetery Assn., Bank of Commerce Bldg., 418 Olive St., St. Louis, Zone 2, Mo., resurf. 14 mi. roads in cemetery, Calvary Ave. between W. Florissant Ave and North Broadway, to Rangerr Bros. Constr. Co., 8510 Lackland Rd., Overland, St. Louis, Zone 14. Approx. **$100,000.** Joyce Eng. Co., 802 Chestnut St., St. Louis, Zone 1, engr.

Nebraska — State Dpt. Roads & Irrigation, Lincoln, wid'n, surf. pave, 0.8 mi. paved road, resurf. 3 mi. paved road, Patrols SG 23416, 23510, 23523, Gretna-Elkhorn, and b. conc. resurf., armor coat 5 mi., FA-F-893, Waterloo-Omaha to Missouri Valley Constr. Co., 1029 Omaha Natl. Bank Bldg., Omaha, **$61,814** and **$236,888** respectively***grading, c. conc., culverts 0.3 mi. paved road, FA—F-309, North Bend to Abel Corners, 1 S.E., Dodge, Lincoln, **$55,605*****sand gravel surf., c. conc., culverts, culverts for detour, 2 bridges, guard rail, etc., 6.5 mi. FA—F-254, Bartley-Cambridge to Dobson & Robinson, 823 1st Natl. Bank Bldg., Lincoln, **$440,975.** Grand total $795,282. Bids 7/28. CD 7/21.

Nevada — State Hy. Dpt., Carson City, 2.947 mi. portion Secondary Hy. Sys. from Las Vegas north city limits northerly and easterly to junction with U. S. 91 and U. S. 93 in North Las Vegas, Clark Co., to Wells Cargo, Inc., 1775 E. 4 St., Reno, **$81,142.** Bids 7/28. W. T. Halcomb, c/o owner, engr.

N. J., Trenton—City, repaving Butler St., etc., to Kingston Bituminous Products Co., Kingston, **$98,781.** J. E. English, city engr. CD 8/27.

North Dakota—State Hy. Dpt., Bismarck, b. conc. surf., etc. 18.745 mi. State Hys. 32 and 46 from Lisbon to east of Enderlin, FAP No. F-28 (10) and F 370 (17), Ransom and Cass Counties, and grading, traffic service grav., etc., 11.014 mi. State Hy. 20 from 10 mi. north of Jamestown north to junction with State Hy. 9, FASP No. FAS-382 (4), Stutsman Co., to W. H. Noel Co., Jamestown, **$273,217** and **$120,689** respectively***traffic service gravel, etc. 11.081 mi. State Hy. 7, from Glenfield west, FAP No. F-45 (2), Foster Co., to Coghlan Constr. Co., Inc., Rolla, **$97,443*****traffic service gravel, structural, etc. 15.484 mi. State Hy. 13 from Milnor to Wyndmere, FAP No. F-147 (2) and F-286 (5), Sargent and Richland Counties, to Herbert Reese, Greenbush, Minn., **$161,902.** Grand total $653,251. Bids 7/29. CD 7/14.

Ohio—State Hy. Dpt., T. J. Kauer, dir., Columbus, Zone 15, bit. tr. one proposal 4.65 mi. S. R. 14, Columbiana and Mahoning Counties, to The Kelley & Meyer Co., 707 Dollar Bank Bldg., Youngstown, **$60,830** est. $60,727 ***Part 1, soil cement base course paving 5.595 mi. Type B-113, S. R. 661; Part 2, stabil. base course paving 2.702 mi. Type B-11, S. R. 661, Licking and Knox Counties, to The Sheelly Co., Thornville, **$68,677** est. $68,186***soil cement base course bit. surf. tr. 10.449 mi. S. R. 247, Type T-31, B-113, Highland Co., to Fenton Constr. Co., Masters Ave., Ashland, **$63,602** est $75,800***b. conc. and constructing continuous steel beam bridge with concrete deck and substructure Bridge No. HI-70-79, 0.366 mi. S. R. 70, Highland Co. to John Hill Contg. Co., 491 Lexington Ave., Mansfield, **$104,000** est. $125,540***Part 1, b. conc. wid'n. resurf. 1.328 mi. S. R. 175, Part 2, drainage 0.042 mi. S. R. 175, Type T-35, Cuyahoga Co. to Great Lakes Constr. Co., 2201 Mulberry St., Cleveland, **$82,241** est. $93,140.

bit. road mix. on bit. macad. resurf. 4.285 mi. Type T-32 on T-33, C. R. 212, Lake Co. to Ajax Petroleum Products Co., 466 Hippodrome Ave., Cleveland, **$61,555** est. $66,370*** bit. road mix on waterbound macad. constructing continuous concrete slab bridge with substructure, Bridge No. 1, Hamilton Run, Mill Creek, 0.321 mi. C. R. 32, Mahoning Co., to **Clyde L. Moore, R. F. D. No. 1, Lowellville, $55,885** est. $64,000***b. conc. wid'n., resurf. 2.469 mi. S. R. 25, Montgomery Co., to Asphalt Products Co., Box 3387, Dayton, 11, Dayton, **$128,537** est. $139,430***b. conc. wid'n., resurf., construct steel through truss bridge with concrete floor and substructure Bridge No. PA-66-83, 0.558 mi. S. R. 66, Paulding Co., to Rockman-Hansen, Inc., 3617 Lima Rd., Fort Wayne, Ind., **$333,525** est. $350,200*** b. conc. paving, constructing continuous steel beam bridge with concrete deck and substructure Bridge No. SC-239-08, 1.001 mi. S. R. 239, Scioto Co., to Frowine Constr. Co., 821 Prospect St., Portsmouth, **$197,481** est. $221,-200.

bit. surf. tr. paving, 13.602 mi. S. R. 348, Adams Co., to Gracco Roadway & Constr. Co., 4501 Vista Ave., Cincinnati, **$83,026** est. $101,260***b. conc. resurf. 7.805 mi. U. S. R. 33, Auglaize and Mercer Counties to Max J. Zeller, Inc., 297 S. High St., Columbus, **$102,-429** est. $125,240***b. conc. wid'n. resurf. 2.014 mi. U. S. R. 30N, Crawford Co. to Ohio Road Imprvt. Co., Chamber of Commerce Bldg., Columbus, **$54,825** est. $55,980; c. conc. paving 3.171 mi. U. S. R. 40, Type T-71, Guernsey Co., to V. N. Holderman & Sons, Inc., 297 S. High St., Columbus, **$635,747** est. $875,600***b. conc. wid'n., resurf. 4.072 mi. Type T-35, C. R. 13, Franklin Co., to Robert J. Dienst & Son, 297 S. High St., Columbus, **$175,500** est. $179,000 ***c. conc. base and hot mixed hot-laid b. conc. surf. 0.879 mi. S. R. 120, Lucas Co., to Pierce Constr. Co., 3005 Bellevue Rd., Toledo, **$265,800** est. $265,300.

b. conc. wid'n., resurf. 1.252 mi. S. R. 159, Pickaway and Ross Counties, to Brewer & Brewer Sons, 31 W. Water St., Chillicothe, **$56,740** est. $57,960***bit. tr. 21.88 mi. Proposals 1 to 3 (inclusive) S. R. 145, Monroe, Noble and Washington Counties, to Walter H. Jones, Route 1, Wooster, **$93,437** est. $105,215 ***bit. tr. 9.08 mi. one proposal, S. R. 13, Licking Co., to The Newark Paving Asphalt Co., W. Poplar Ave., Newark, **$57,997** est. $59,621*** bit. tr. 14.27 mi. Proposals 1 and 2, S. R. 141 and S. R. 325, Gallia Co. to Edgar Spring, Inc., Box 177, New Philadelphia, **$53,870** est. $64,099; b. conc. resurf. 3.247 mi. S. R. 10, Cuyahoga Co. and b. conc. wid'n., resurf. 2.606 mi. U. S. R. 21, Cuyahoga Co. to Wm. L. Schloss Paving Co., 3494 Lee Rd., Cleveland, **$91,171** est. $126,400 and **$196,4** est. $203,440 respectively. Grand total $3,023,326 Bids 7/19, awarded 7/23. CD 11/24/43.

Ore., Grants Pass—City, City Hall, street imprvs., incl. sidewalks, curb and gutters, tile drains, catch basins, driveway and alley approaches and alley paving, to Ashland & Dodson, Grants Pass, **$72,676.** Awarded 7/28. Edward N. McKinstry, city engr.

●South Carolina — State Hy. Dpt., Columbia, bit. tr. 10.861 mi. S.C. Dockets 34.248, Union Co., and bit. 15.007 mi. Rds. 53, 73, 82 and 24, S.C. Dockets 5.252, 15.299, etc., Bamberg and Colleton Counties to W. M. Reagan & Sons, Weaverville, N. C., **$107,087** and **$118,358** respectively***wid'n., paving 0.87 mi. U. S. Routes 25 and 278, S.C. Docket 23.281.2 Greenville Co., to Ballenger Paving Co., Greenville, **$128,670*****resurf. 18.2 mi. U. S. Routes 25 and 178 and State Route 252 and Roads 40 and 84, S.C. Docket 24.1023, Greenwood Co., to Georgia-Alabama Paving Co., 2011 Andrews Rd., Columbus, Ga., **$96,618*****bit. 11.162 mi. Roads 19, 25, 34, 54 and 32, S.C. Dockets 34.248, 34.246, etc., Marion Co., to Hubbard Constr. Co., Marion, **$119,146*****wid'n. paving 2.095 mi. U. S. Routes 1 and 76, S.C. Dockets 40.300 and 40.301.2, Richland Co., to E. H. Hines Constr. Co., Greenwood, **$321,572*****bit. 5.745 mi. Rds. 22 and 51, S.C. Dockets 44.251 and 44.252,

Union Co., to Reeves Bros. Constr. Co., Inc., Easley, **$51,694*****bit. 11,081 mi. Rds. 55, 83, 38 and 25, S.C. Dockets 45,252 and 45,255, Parts 1 and 2, Williamsburg Co., to Robert Lee, Inc., Manning, **$124,119.** Grand total $1,067,-304. Bids 7/19. CD 7/14.

Tex., Bellaire—City, Bellaire, shell and asph. street paving, purchase and hire. **$75,000.** Woestemeyer & Gaffney, 2351 Claremont Lane, Houston, consult. engrs. CD 5/27.

Tex., Fort Worth—Tarrant Co., Courthouse, addnl. road reconstruction, grading, surf., Precinct 1, **$60,000;** Precinct 2, Approx **$50,000,** force account. Matt Walker, co. engr. CD 6/30.

Tex., San Antonio—City, City Hall, reconstruct, repair, grade, surf., certain streets, Southside, **$80,000;** reconstruct, repair, grade, surf., drainage, in the Highlands, **$75,000,** force account. W. W. Toxel, city engr. CD 7/13.

Tex., Spring Branch (Houston P. O.)—Hamilton & Wright, Wright Loan & Securities Co., 1st. Natl. Bank Bldg., 1100 Houston, asph. paving, site grading, own forces. Approx. **$70,000.**

Tex., Wichita Falls—R. G. Hughes, Pampa, construction and asph. paving streets. Own forces. Approx. **$75,000.**

Utah—State Road Comn., Salt Lake City, road mixed bit. road surf. 3.845 mi. between Woods Cross and Bountiful, FASP No. S-86-61 (4), Davis Co., to Parson & Fife Constr. Co., Brigham City, **$82,888.** Est. $81,952. Bids 7/19.

Wash., Seattle—City, County-City Bldg., paving, constr. retaining walls and traffic control islands and devices on Boren Ave., Boren Ave. S. and 12 Ave. S., Broadway to Jackson St., to Seattle Constr. Co., 101 Nickerson St., **$84,217,** est. $96,391; paving alleys in L. I. D. No. 3915, to Fiorito Bros., 1100 Leary Way, Seattle, **$61,685,** est. $66,038. Bids 7/27.

West Virginia—State Road Comn., Charleston, hot laid b. conc. surf. 2.291 mi. Upton-Creek-Highlawn, FAID F.I. 222 (15) Kanawha Co., to Anderson's Inc., 1400 Penn. Ave., Charleston, **$86,587*****traffic bound base Type B, 1381 mi. U. S. 19-Secondary Rd. 9 FASP S-587 (1) and traffic bound base Type B (Rev.) 1.685 mi. Secondary Rd. 9 Beckley Airport Rd., SSP 7281, both Raleigh Co., to Atlas Eng. Co. & Sam G. Pollins, Elkins, **$83,124** and **$68,428** respectively. Grand total $238,179. Bids 7/19, awarded 7/25. CD 7/8.

Wisconsin—State Hy. Comm., Madison, grading, paving and structure 0.663 mi. U. S. Hys. 2 and 53, Superior, Proj. U-08-5 (37), Contr. 1, Douglas Co., to J. L. Sullivan & Sons, Inc., 230 Third St. S., Wisconsin Rapids, **$113,338.** Bids 7/29. CD 7/15.

Man., Winnipeg—Municipality, e. conc. various locations, own forces, **$74,418.** W. D. Hurst, city engr.

N. S., Pictou—Municipality, permanent pavement, to Warren Bituminous Paving Co. Ltd., 1454 Bloor St. W., Toronto, Ont., **$54,000.** G. A. Nicholson, town engr.

EARTHWORK, WATERWAYS

BIDS ASKED

August 16

†Missouri—U. S. Eng., P. O. Box 97, Memphis, Zone 1, Tenn., approx. 610,000 cu. yd. earthwork, levee construction, Dunklin Co., Serial No. CIVENG 40-041-50-5. CD 7/21.

August 18

†Idaho—Bureau Reclamation, Dpt. Interior, Boise, cleaning part Cascade reservoir site south of Arling, Payette Div., Boise Proj. between 3 mi. southwest of Cascade and 7 mi. north of Cascade, Spec. R1-50.

†Louisiana—U. S. Engs., Fort Prytania St., New Orleans, approx. 380,000 cu. yd. uncompacted levee embankment, East Atchafalya River Levees, Point Coupee Parish, Serial No. Eng. 16-047-50-27.

August 24

New York—Dpt. Pub. Wks., B. D. Tallamy, supt., Albany. Zone 1, hydraulic fill, East Atlantic Beach, town of Hempstead and city of Long Beach, Nassau Co. $90,000. Plans deposit $5; adv. ENR 8/11.

On or About August 25

†Kentucky—U. S. Eng., P. O. Box, 97, Memphis, Zone 1, Tenn., triangular frame retards, east bank of Mississippi River, river mile 913 above head of passes, approx. 10 mi. west of Hickman, Fulton Co., Serial No. Eng. 40-041-50-13.

Bids Asked

Miss., Vicksburg—Inland Constr. Co. Inc., P. O. Box 507, Rosedale, clearing, snagging approx. 6.5 mi. Steele Bayou, near here; adv. ENR 8/11.

LOW BIDDERS

†Arkansas—U. S. Enf., 300 Broadway, Little Rock, cancelled bids to have been opened Aug. 12, emergency levee repairs, Arkansas River Watershed Faulkner County Levee Dist. 1, Arkansas River, Serial No. CIVENG-03-050-50-4. CD 7/22.

†California—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., rejected bids June 7, Schedules 1, 2, 3, 6, 7 and 8, 10 distr. boards, transformers, thermostats, switches and temperature switches, for Tracy Pumping Plant and switchyard, Central Valley Proj., Spec. 2642. Will re-advertise. CD 5/24.

†California—U. S. Eng., Wright Bldg., Sacramento, cancelled bids to have been opened Aug. 9, clear channel Putah Creek, Spec. 04-167-50-3. CD 7/20.

Florida—State Rd. Dpt., Tampa, July 28, embankment 2.492 mi. on Rd. A1A beginning near Rd. 802 and point approx. 2.492 mi. North Proj. 9306-111, Palm Beach Co., from Standard Dredging Corp., 80 Broad St., New York, N. Y., **$118,834.** CD 7/18.

†Missouri—U. S. Eng., 601 Davidson Bldg., 10 E. 17 St., Kansas City, S. Mo., July 26, 10,000 ft. revetment, dike repair and rock fill, adjacent to Missouri River, Weavers to Parkville Bends, approx. 392.5 mi. above mouth and approx. 3.5 mi. upstream from Parkville, Serial No. Eng. 23-028-50-5, from The Massman Constr. Co., 20 W. 9 St., Kansas City, Mo., **$226,678.** Est. $221,414. CD 7/15.

†Missouri—U. S. Eng., 601 Davidson Bldg., 10 E. 17 St., Kansas City, S. Mo., July 28, 11,880 lin. ft. pile dikes, revetment, dike and revetment repairs, Missouri River Sheep Nose to Miami Bends, approx. 289 mi. above mouth and approx. 8 mi. downstream from Waverly, Serial No. Eng. 23-028-50-7, from Bilhorn Bower & Peters, Inc., 8003, Forsyth Blvd., Clayton, St. Louis 5, Mo., **$366,779.** Est. $385,362. CD 7/29.

New York—Dpt. P. Wks., Albany, Aug. 3, beach protection, 6 stone jetties, Suffolk Co., from Edward Acker Corp., 128 E. Broadway, Port Jefferson, **$32,960.** Est. $42,460. CD 7/15.

†Oregon—U. S. Eng., 19 E. Poplar St., Walla Walla, Wash., July 29, two 3,750 kva. alternating-current generators, appurtenances for McNary powerhouse, Serial No. Eng.-46-164-49-121, from Electric Machinery Mfg. Co., 1331 N. E. Tyler St., Minneapolis, Minn., **$155,132.** CD 6/24.

†Pennsylvania—U. S. Eng., 925 New Federal Bldg., Pittsburgh, July 15, construct footer protection, fourth unit, Johnstown Channel Imprvt., Johnstown, Eng-36-058-49-155, from Associated Constructors, Box 158, Perrysville, **$439,775.** Est. $456,887. CD 7/5.

Pennsylvania—Dpt. Forests & Waters, 463 Education Bldg., Harrisburg, Aug. 2, flood protection works, incl. clearing, channel excav., levee constr. and bank protection work, in Patton Boro, and Ebensburg Boro. and Cambria Co., from George Bobo Co., Grove City, **$186,607.** CD 7/25.

CONTRACTS AWARDED

†Arizona — Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., Schedule 2, three 3,000 hp. synchronous motors, Hellton-Mohawk Pumping Plant 2, Gila Proj., Spec. 2675, to Electric Mchy. Mfg. Co., 1331 N. E. Tyler St., Minneapolis, Minn., **$138,245.** Bids 6/28, awarded 7/18. CD 7/8, under LB.

†Mississippi—U. S. Eng., P. O. Box 60, Vicksburg, approx. 735,000 cu. yd. earthwork, Panola-Quitman Floodway Serial No. Eng. 22-052-49-243, to Cook Constr. Co.; Standard Life Bldg., Jackson, **$287,100.** Bids 7/14, awarded 7/18. CD 7/30.

Tex., Fort Worth—City, City Hall, addnl. drainage, force account. **$40,000.** W. O. Jones, city engr.

†Wyoming—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., 93,800 bbl. portland cement for Boysen Dam, power plant, spillway, and railroad relocation, Spec. R6-COD-4 (Region 6), to Monolith Portland Midwest Co., Tranway Bldg., Denver, Colo., **$300,160.** Awarded 6/29.

●†Alaska, Nome—U. S. Eng., 4735 E. Marginal Way, Seattle 4, Wash. 3,350 ft. rock seawall in Norton Sound, to Manson Constr. Co. & Osberg Constr. Co., 821 Alaskan Way, Seattle, Wash., **$1,063,900.** Bids 6/30. CD 7/7, under LB.

AIRPORTS AND AIRBASES

BIDS ASKED

August 22

†N. C., Cherry Point (Br. New Bern)—RECREATION BLDG.—At office Lt. C. Abplanalp, Commander CEC USN, Officer in Charge of Construction, Marine Corps Air Station, Cherry Point, memorial recreation bldg. at Marine Corps Air Station, Spec. 21262. Plans deposit $20. CD 8/10/48, under LB.

August 23

●Colo., Akron—STATION—Civil Aeronautics Admin., City Hall, Kansas City, Mo., interstate airways communication station.

August 25

†Calif., Point Mugu—BUILDINGS—Officer-in-Charge of Construction, U. S. Naval Air Missile Test Center, Point Mugu, test and evaluation, small missiles projects, main base transmitting, Laguna Peak transmitting, Laguna Peak Receiving and high pressure air and inert gas station bldgs. Spec. 20613. Plans deposit $120.

†N. M., Alamogordo—ROCKET FACILITIES —U. S. Eng., P. O. Box 1538, Albuquerque, rocket flight test facilities, Phase V, Holloman Air Force Base A-92, Serial No. Eng-29-005-50-5. CD 7/21.

●O., Dayton — ROTARY WING TESTING FACILITIES—U. S. Eng., P.O. Box 59, Louisville 1, Ky., construct rotary wing testing facilities, Wright-Patterson Air Force Base, Serial No.-ENG-15-029-50-3. Extended date. CD 7/18.

LOW BIDDERS

Nev., Overton — AIRPORT — Clark Co., Court House, Las Vegas July 29, development airport, runways, taxiways, etc., Spec. 200, Proj. 9-26-002, from Gibbons & Reed Co., 695 W. 9 N. St., Salt Lake City, Utah, **$81,921.**

SOON LETS CONTRACT

†Mich., Selfridge Air Force Base—HOUSING —U. S. Eng., 520 Merchandise Mart, Chicago 54, Ill., pavements and exterior utilities, family type quarters, Selfridge Air Force Base, Serial No. Eng. 11-032-49-117, to Coulter Bros., Inc., 30903 Groesbeck Hy., Roseville, **$79,523.** Bids 7/12, awarded 7/14.

†N. M., Alamogordo—HOUSING—U. S. Eng., P. O. Box 1538, Albuquerque, 50, 27x47 ft. frame, stucco, or masonry family quarters, concrete slab fdn., Holloman Air Force Base, Serial No. Eng.-29-005-49-90, to Ponsford Bros., 914 E. Missouri St., El Paso, Tex., **$503,210.** Bids 6/2. CD 6/14, under LB.

LATIN AMERICA

Brazil, Recife—Republic of Brazil, Rio de Janeiro, awarded contract rein.-con. bridge on the Bebevide River, to Constructora Leao Ribeiro S. A., Rio de Janeiro. Approx. **$500,000.**

Uruguay, Montevideo—Administracion General de Cas Usinas Electricas y Telefonas del Estado, Montevideo, receiving bids suppling, installing one group generators producing 50,000 kw. alternating current for the thermo-electric plant Batlle y Ordonez. CD 5/24.

PUBLIC BUILDINGS

BIDS ASKED

August 15

Ont., Toronto—SCHOOL—Parrott & Assoc., archts., 57 W. Bloor St., school, Bennington Heights Dr., for Twp. of East York, Toronto. Plans deposit $25.

August 18

Minn., St. Paul—AUDITORIUM—University of Minnesota, R. S. Callaway, purch. agt., 323 Administration Bldg., Main Campus, Minneapolis, auditorium addn. to animal husbandry bldg., St. Paul campus. Approx. $250,000. Plans deposit $25. C. H. Johnston, 715 Empire State Bldg., archt.

August 20

Tex., Odessa—HIGH SCHOOL—Ector County Independent School Dist., Odessa, masonry Junior High School, concrete slab fdn., incl. 4 boiler houses. $850,000. Plans deposit $25. Virgil A. Davis, P. O. Box 1847, archt. Bids 6/18 rejected, L. B. **$702,300.** CD 6/27, under LB.

August 22

N. J., Burlington—SCHOOL—City, Bd. Educ., Burlington, Lawrence Shool addns., alterations, $770,000. Micklewright & Mountford, 72 Ewing St., Trenton, archts. CD 7/19.

August 24

Utah, Roosevelt—HIGH SCHOOL—Duchesne County School Bd., Duchesne, Union High School. $400,000. Bids 4/7 rejected. Fetzer & Fetzer, Templeton Bldg., Salt Lake City, archts.

LOW BIDDERS

Ala., Athens — HOSPITAL — Athens Limestone Hospital Auth., Athens, July 27, hospital, from Irrice Building Co., Box 1028, Birmingham, **$396,800.** CD 7/18.

●Colo., Pueblo—HOSPITAL—Colorado State Hospital, c/o Dr. F. H. Zimmerman, State Hospital, Pueblo, July 28, general contract from Knead & Mount Constr. Co., 422 Denver National Bank Bldg., Denver, **$2,167,000;** plumbing and heating, from Johnson & Davis Plumbing & Heating Co., 2235 Aprapahoe St., Denver, **$330,621.** CD 7/1.

Fla., Tampa—WAREHOUSE, etc.—City, July 26, warehouse and shop for WW Dpt., from J. H. Sultenfuss, 803 James Ave., **$158,946.** CD 7/11.

Idaho, Blackfoot — UTILITY — State Dpt. P. Wks., State House, Boise, utility bldg. State Hospital South, from C. B. Lauck Constr. Co., 435 Ada St., Boise, **$363,830.** CD 7/3/46.

●†La., New Orleans—HOSPITAL—U. S. Eng., foot Prytania St., Aug. 2, 10 story main bldg., U. S. Veterans Admin. Hospital, from Robert E. McKee, 2708 Inwood Rd., Dallas, Tex., **$7,687,-000;** elevators, from Otis Elevator Co., 810 18 St. N. W., Wash. 25, D. C. **$349,975.** CD 6/6.

●Mass., Watertown—HOUSING—Town of Watertown Housing Auth., Watertown, July 27, housing, Lexington St., from Calumet Constr. Co., 50 Calumet St., Roxbury, **$1,120,236.** CD 7/12.

N. Y., New York—BUS TERMINAL—Port of New York Auth., 111 8th Ave., Zone 11, cancelled bids to have been opened Aug. 1, sub-grade walls for the Port Authority Bus Terminal between W. 40 and W. 41 Sts. and 8 and 9 Aves. CD 7/21.

●Tenn., Memphis — PATHOLOGY—University of Tennessee, 874 Union Ave., July 26, general contract Institute of Pathology, from Foster & Creighton, 1352 Madison Ave., **$1,039,800.** CD 6/24.

●Tex., Denton — BUILDINGS — North Texas State Teachers College, Denton, July 28, 3 story, humit, science bldg., from Henry C. Bennett, 1315 Cadiz St., Dallas, **$760,909***** Dormitory 1, from A. H. Ewing's Sons, Inc., 2000 Fort Worth Ave., Dallas, **$299,127*****1 story masonry gymnasium, concrete slab fdn., from Meers Constr. Co., 312 Gr Natl. Life Bldg., Dallas, **$268,856** est. $250,000***cancelled bids to have been opened July 29, Dormitory 2, Approx. **$250,000.** CD 7/19.

Tex., Houston — SCHOOL—Houston Independent School Dist., 1600 Washington St., July 28, masonry Betsy Ross School remodeling, expanding, 2819 Bay St., from Marxen & Son, 3627 Westheimer Rd., **$379,568,** alt. **$118,-806.** Est. $275,000. Stayton Nunn, 2425 Ralph St., co-ord. archt. Werlin & Kiefner, 3500 Buffalo Dr., archts.

Wash., Cheney — DORMITORY — Eastern Washington College of Educ., Cheney, July 29 general contract women's dormitory, from Bushboom & Rauh, N. 601 Cedar St., Spokane, **$512,147.** CD 7/13.

CONTRACTS AWARDED

Ala., Dothan—SCHOOL—State Bd. Educ., Montgomery, trade school, to Jones & Hardy, Montevallo, **$458,733.** Bids 7/21, awarded 7/28. CD 6/27.

●**Calif., Patton** — TUBERCULOSIS UNIT — State Div. Architecture, P. Wks. Bldg., Sacramento, general contract 2 story part bsmnt., rein.-con. 128,000 sq. ft. tuberculosis unit, 1 story 6,600 sq. ft. rein.-con. ward bldg., at Patton State Hospital, to James I. Barnes Constr. Co., 1119 Montana Ave., Santa Monica, **$1,230,610.** Bids 7/12. CD 7/19, under LB.

●**Calif., Soledad**—PRISON—State Div. Architecture, P. Wks. Bldg., Sacramento, general contract 434,000 sq. ft. rein.-con. Medium Security Prison, to M & K Corp., 405 Montgomery St., San Francisco, Fredrickson & Watson Constr. Co., 873 81 Ave., Oakland, and Piombo Constr. Co., 1571 Turk St., San Francisco, **$4,488,000.** Bids 7/19. CD 7/26, under LB.

Ill., Quincy—POWER PLANT IMPRVS.—State Div. Architecture & Engrg., Capitol Bldg., Springfield, power piping, tanks, heaters, pumps and accessory equip., also coal and ash handling equip., for power plant alterations, Illinois Sailors and Soldiers Home, to Gallaher & Speck, Inc., 546 W. Harrison St., Chicago, **$279,293** and **$69,088** respectively. CD 4/9/45.

Md., Bel Air—SCHOOL—Bd. Educ., Harford Co., Bel Air, 1 story, brick, concrete, colored school, to Frantz Constr. Co., 10 W. Chase St., Baltimore, **$649,950.** CD 7/26, under LB.

Miss., Columbus—CLASSROOM—State Bldg. Comn., New Capitol Bldg., Jackson, general contract classroom bldg., Mississippi State College for Women, to Myers & Quinn, Columbus, **$381,577.** Bids 7/26. CD 7/11.

Miss., University—LIBRARY—State Bldg. Comn., Jackson, library at University of Mississippi, to M. T. Reed Constr. Co., Box 1066, Jackson, **$589,833.** Bids 7/26. CD 6/24.

●**N. Y., Brooklyn**—OFFICE—Bd. Transportation, 250 Hudson St., New York, Zone 13, general contract central office bldg., to Clive Shepherd, Wilson & Kruge, Inc., 247 Park Ave., New York, Zone 17. **$4,528,000***** electrical work, to Jandous Electric Constr. Corp. and Hoffman & Elias, Inc., 210 E. 40 St., New York, Zone 17. **$1,287,000***** elevators and moving stairs, to Otis Elevator Co., 260 Eleventh Ave., New York, Zone 1, **$871,344.** Grand total $6,689,344. Bids 7/12. CD 7/14, under LB.

●**N. Y., Utica**—HOUSING—Municipal Housing Auth., Washington Courts and Whitesboro St., general contract housing for Post War Proj. NYS-27 Site C, located in South Utica on Merril line, Hazelhurst and Hillcrest Aves., to F. D. Rich & Co., Inc., 101 Park Ave., New York, Zone 17, **$1,043,350.** Bids 6/15. CD 7/15, under LB.

Tex., Houston—HIGH SCHOOL,—Houston Independent School Dist., 1600 Washington St., John Reagan Senior High School to Farnsworth & Chambers, Inc., P. O. Box 74, **$568,382.** Bids 7/14, awarded 7/27. CD 7/29, under LB.

Man., Winnipeg — GARAGE — Municipality, concrete, brick police garage and station, to Clayton Co. Ltd., 290 Garry St., **$199,997.** Moody & Moore, 295 Broadway, archts. CD 6/30.

N. B., Chatham—HOUSING—Central Mortgage & Housing Corp., 1032 Gottingen St., Halifax, N. S., 100 houses, D. N. D. Proj., to Eastern Woodworkers, Ltd., New Glasgow, N. S. Approx. **$670,000.** Bids 7/6. CD 6/28.

N. S., New Waterford—HOSPITAL—Municipality, hospital, to M. R. Chappell, Sydney, Approx. **$250,000.** L. R. Fairn, 41 Argyle St., Halifax, archt. Dpt. Health, Halifax, engr. 7—LA ROSE

COMMERCIAL BUILDINGS

BIDS ASKED

August 17

Ga., Atlanta — APARTMENT—Tilecraft of American, c/o Moscowitz Willner & Millkey, 1000 Peachtree St. N. E., apartment.

August 18

Ga., Macon—BUILDING—Young Womens Christian Assn., c/o Dennis & Dennis, archts., Bankers Insurance Bldg., Macon, Y. W. C. A. Bldg. CD 4/21.

August 23

Ga., Decatur—CHURCH, etc.—First Christian Church, c/o Poundstone, Ayers & Godwin, archts., Palmer Bldg., Atlanta, church and sunday school. Extended date. CD 7/18.

Bids Asked

●**Pa., Bala Cynwyd**—STORE—J. B. Von Sciver Co., Market St. Ferry, Camden, **N. J.,** furniture store, $1,000,000. H. F. Everett & Assoc., 512 Hamilton St., Allentown, archts. CD 8/27/48.

Ont., Ottawa—HOUSING—Morrison Lamothe Bakery Ltd., Echa Dr., 50 houses for employees. Approx. $400,000.

SOON LETS CONTRACT

Ill., Chicago Heights—HIGH SCHOOL—Catholic Bishop of Chicago, 719 N. Wabash St., Chicago, Zone 10, soon lets contract, 3 story, brick, concrete, steel, stone high school, $500,-000. R. L. Ignelzi, 1343 Garden Ave., archt.

Ill., Chicago—SCHOOL and CHURCH—St. John De La Salle Parish, c/o Pirola & Erbach, archts., 221 N. LaSalle St., soon lets contract, 2 story, brick, steel, concrete school and church.

Kan., Hutchinson—HOSPITAL—Grace Hospital, soon lets contract hospital addn. $440,000, Schmidt, Garden & Erikson, 104 S. Michigan St., Chicago, Ill., and McCracken & Hiatt, Hutchinson, archts.

LOW BIDDERS

Ala., Cullman—HOTEL—Cullman Development Co., Cullman, rejected bids July 26, hotel. Project abandoned. CD 7/11.

Fla., Tallahassee — SHOPPING CENTER—Mr. & Mrs. Frank Johnson, c/o James A. Stripling & Assoc., archts., Child Bldg., rejected bids July 18, shopping center. L. B. **$280,218.** CD 7/28, under LB.

SOON LETS CONTRACT

Ala., Birmingham — HOMES—Beachwood Park, Inc., 218 N. 21 St., 124 homes. Owner builds, **$450,000.**

Ala., Birmingham — HOMES—Durwood Rivers, 3706 3 Ave. S. 35 homes, Belair and Beverly Drives. Owner builds, approx. **$250,000.**

Ala., Birmingham — APARTMENT — Sheraton Apartments, c/o Horace Weaver, archt., Swann Bldg., apartment, to J. A. Jones Constr. Co., Walton Bldg., Atlanta, Ga., Approx. **$500,000.** CD 7/11.

Ark., Arkadelphia — SCIENCE—Ouachita College, Arkadelphia, science and library, to G. W. May, 1115 E. 2 St., Little Rock, **$344,900.** Bids 7/29, CD 7/7.

Ark., Camden — HOMES—First Federal Savings & Loan Assoc., c/o Harry Wanger, archt. Pyramid Bldg., Little Rock, 100 homes. Owner builds. CD 6/17.

Calif., Fresno—RESIDENCES—Oscar Spano & A. J. Pasco, Better Homes Co., 2318 Blackstone St., 40 residences, on 10-acre site, Owner builds, Approx. **$250,000.**

Calif., San Francisco — APARTMENT HOUSES—Grace Perego 50 Post St., 6 apartments. Owner builds, **$270,000.** H. C. Baumann, 251 Kearny St., archt.

D. C., Wash.—APARTMENT—Fillippo Baldi, Southern Bldg., 8 story, 122 unit brick, concrete apartment at 1221 thru 1227 13 Sts. Owner builds, **$550,000.** Arthur L. Anderson, 1726 M St. N. W., archt.

●**D. C., Wash.**—APARTMENT—Waverly Tayler, Inc., 1028 Connecticut Ave. N. W., 8 story, 485 unit concrete brick apartment, 2500 Wisconsin Ave. N. W., to Alvin L. Aubinoe, Inc., 1907 Pennsylvania Ave. N. W., **$2,340,000.** Aubinoe, Edwards & Berry, 1907 Pennsylvania Ave. N. W., archts.

Fla., Miami—APARTMENT—Flamingo Village Apartments, Inc., c/o contractor, apartment development, to Miami Park Development Corp., 8901 N. W. 17 Ave., Approx. **$350,000.**

Fla., North Miami—HOMES—Royal Palm Homes, Inc., 725 N. W. 133 St., 34 homes, Owner builds, Approx. **$250,000.**

Fla., Panama City—HOMES—J. H. McCormick & Assoc., 300 S. Perry St., Montgomery, Ala., 200 homes, Owner builds, Approx. **$500,000.**

●**Fla., St. Petersburg**—APARTMENT—Royal Court Apartments, Inc., c/o contractor, 168 apartment units, to Thomas A. Radford, Live Oak, Approx. **$1,000,000.**

Ill., Chicago—STORE—George W. Prassas & Co., 111 W. Washington St., Zone 2, 75x125 ft. frame, brick food store, for Kroger Co. (lessee), 3249 N. Central Ave., Zone 41, masonry, to Hope Constr. Co., 4720 W. Addison St., Zone 41***carpentry, to H. Andrews, 5153 N. Park St., Zone 40***heating, to Fields Heating & Ventilating Co., River Grove*** plumbing, to Fred Dietz Plumbing Co., 2859 W. 63 St., Zone 29. Approx. **$250,000.** Awarded 7/20. Carl M. Teusch 1205 W. Lawrence St., Zone 40, archt.

Ill., Chicago—STORE—F. W. Woolworth Co., 671 N. Michigan Ave., Zone 11, 1 story, bsmnt., 78x225 ft. steel, brick stone store, to Inland Constr. Co., 134 N. LaSalle St., Zone 1, **$392,400.** George Braun, Jr., 228 N. LaSalle St., Zone 1, archt. Awarded 7/12.

Ind., Munster—APARTMENTS etc.—Suburban Land Co., 7827 Hohman St., 2 story, bsmnt., brick, stone apartment and stores, incl. 41 apartments, 5 stores, Hohman and Hollywood Aves. Owner builds, **$250,000.** Warriner & Warriner 527 Broadway, Gary, archts. CD 8/2.

Kan., Leavenworth—HOUSES—L. L. Rafter, 523 Walnut St., houses, Owner builds. **$250,000.** C. W. Foster, Manhattan, archt.

Neb., Lincoln — DWELLINGS—John H. Hueske Building Co., Sharp Bldg., 68 dwellings. Owner builds. Approx. **$400,000.** S. A. Solheim, Sharp Bldg., archt.

O., Columbus—HOME—Bishop Michael J. Ready, 198 E. Broad St., St. Raphael Home addn., 3 story residence for aged, 1550 Roxbury Rd., to Mulligan-Case Co., Inc., 496 Hutton Pl., Approx. **$400,000.**

O., Garfield Heights — HOMES—Goudreau Building Corp., 12012 Shady Oak Blvd., fifty 1 story bsmnt., 24x30 ft. and 24x32 ft. frame homes, Shady Oak Blvd., separate contracts. **$100,000.** CD 2/4/48.

●**O., Middleburgh Heights**—HOMES—Briarcliff Homes, Inc., 3119 W. 139 St., Cleveland, one hundred, 1½ story bsmnt., frame and stone, frame and brick and frame only homes, Bradbury, Marrimore and Webster Sts., and Pearl Rd., separate contracts. Approx **$1,000,000.**

O., North Olmsted—HOMES—N. F. Malnar Builders, 22591 Lorain Rd., Cleveland, 42 one story, 27x30 and 24x37 ft. homes, Lucydale, Whitehorn and Andrews Sts., separate contracts. Approx. **$400,000.**

Okla., Tulsa — SANCTUARY, etc.—White City Baptist Church, 4739 E. 5 St., church sanctuary and educational bldg., to J. Ray Smith, 1241 S. Lewis St., Zone 6, **$250,000.** Awarded 7/20. Malcolm McCune, 1308 S. Utica St., Zone 6, archt.

Pa., Homestead — CHURCH—St. Nicholas Greek Catholic Church, Homestead, 1 story, brick, stone church, 9 and Ann Sts., to Clement Martin, Inc., 1831 Murray Ave., Pittsburgh, Approx. **$250,000.** CD 2/3.

Pa., Pittsburgh—CHURCH—German United Evangelical Church, 128 Madeline St., 1 and 2 story, brick, limestone church, Conrad School site, to Henry Busse Co., 112 Wabash Ave., Approx. **$250,000.** Bids 5/28. CD 5/31.

Pa., Pittsburgh — APARTMENT—Martin McFarland Apartment, Inc., 26 and Sarah St., 6 story, 72x85 ft. brick, concrete, steel apartment, Mt. Lebanon Twp., to Superior General Contg. Co., 26 and Sarah Sts., Approx. **$300,000.** Phillip Friedman, 121 S. Negley St., archt.

Pa., Sharon — SYNAGOGUE—Temple Beth Israel, Sharin, synagogue in Highland Rd. Dist., to Calvert Lumber Co., Sharon, Approx. **$270,000.** CD 7/13.

Tex., Beaumont—APARTMENTS—Northway Arms Corp., Beaumont, 24 one story apartments. Owner builds. **$745,000.** Robert W. Clemans & Assoc., 4110 Dennis St., Houston, archts.

Tex., Bellaire — DWELLINGS—Preston R. Plumb, Jr., 4550 Griggs Rd., Houston, 45 dwellings, own forces. Approx. **$500,000.** CD 7/28.

Tex., Bryan — CHURCH—First Methodist Church, Bryan, church to B. B. Butler, Bryan, Approx. **$340,000.** Edward Bodet, 3104 Main St., Houston, archt. CD 2/2.

Tex., Dallas—APARTMENTS—L. F. Corrigan, 2206 Mercantile Bank Bldg., 8 brick veneer, concrete frame apartments, concrete slab fdns., Lovers Lane and Greenway Blvd. Owner builds. **$325,000.** CD 7/28.

Tex., Houston—DWELLINGS—Farworth Co., 7800 Keable St., 27 dwellings. Owner builds. Approx. **$250,000.** CD 7/28.

Tex., Houston—DWELLINGS—George Janowski, 19 Berry Rd., 31 dwellings. Owner builds. **$450,000.** CD 7/28.

Tex., Houston—COMMERCIAL—Olson Bros., M. Esperson Bldg., No. 1, 13, 160 sq. ft., masonry commercial bldg., concrete slab fdn., in The Village near West University Place. Owner builds. **$250,000.** CD 7/28.

Tex., Houston—TELEPHONE—Southwestern Bell Telephone Co., 1121 Capitol St., masonry telephone bldg. for mechanical installations, Austin and Pease Sts., to W. S. Bellows Constr. Co., 716 Overton St., Approx. **$250,000.**

●**Tex., Lubbock** — APARTMENTS—Modern Manors, Inc., Lubbock, 48 apartment units, to Robert E. Maxey, Lubbock, Approx. **$1,900,000.** CD 8/1.

Tex., Pasadena—DWELLINGS—Charles R. Olds & Assoc., 3425 University St., Houston, 75 low-cost dwellings on 395 acre tract, own forces. **$350,000.** CD 4/8.

Tex., Wichita Falls—SHOPPING CENTER—R. G. Hughes, Pampa, shopping center. Owner builds. Approx. **$300,000.** CD 7/15.

●**Wash., Seattle** — APARTMENT—Decatur Corp., c/o O. A. Carlson, 1900 Naomi Pl., 14 story, 120x120 ft. rein.-con. apartment, to J. C. Boespflug Constr. Co., 1912 4 Ave. S., Seattle, **$1,200,000.** John Graham, Sr., Dexter Horton Bldg., Zone 4, archt.

Wis., Milwaukee — APARTMENT—Garden Home Investment Co., 3066 S. 43 St., Zone 7, twelve 1 story, 41x46, 18x43 and 18x46 ft. apartments, to Conventional Build. Homes Inc., 3066 S. 43 St., Zone 7. Approx. **$300,000.** C. A. Riemenschneider, 2650 N. 27 St., Zone 10, archt.

INDUSTRIAL BUILDINGS

BIDS ASKED

August 16

Ga., Atlanta — PLANT, etc.—J. J. Finnigan Co., Inc., c/o Robert & Co. Assoc., archts., 96 Poplar St. N.W., mfg. plant addns., alterations.

Bids Asked

Wis., Milwaukee — WAREHOUSE — International Trading Co., 229 E. Wisconsin Ave., Zone 2, 1 story, 128x227 ft., steel, brick, concrete block warehouse, concrete fdn. and floor, George Zagel & Bro., 424 E. Wells St., Zone 2, archts.

Alta., Edmonton — WAREHOUSE — Crane Ltd., Kingsway, warehouse, $250,000. Rule, Wynn & Rule, 300 Birks Bldg., archts. CD 7/21.

SOON LETS CONTRACT

Fla., Tallahassee — SALES and SERVICE — Alford Chevrolet Co., c/o E. M. Watkins & Co., engrs., P.O. Box 997, Tallahassee, soon lets contract auto sales and service bldg. CD 10/28/48.

Pa., Erie — WAREHOUSE — Erie Brewing Co., 2131 State St., soon lets contract, brick, concrete block, steel warehouse addn. $150,000. Meyers & Krider, 407 Commerce Bldg., archts.

Tenn., Sweetwater—WAREHOUSE—Farmers Burley Co-operative, c/o Joe Bilderback, Sweetwater, soon lets contract, tobacco warehouse. Approx. $100,000.

Tex., Amarillo—SHOP—Plains Chevrolet Co., Amarillo, soon lets contract, 1 story 30,000 sq. ft. concrete, structural iron frame auto shop, service, sales, concrete slab fdn., $140,000. Emmett F. & James F. Rittenberry, 1000 Fisk Med. & Prof. Bldg., archts. Frank T. Drought, 117 W. Pecan St., San Antonio, engr.

Tex., San Antonio—STOCK and STORAGE—O'Krent Floor Covering Co., 411 N. St. Marys St., soon lets contract, stock and storage, $75,000. Ralph H. Cameron, 1701 Transit Tower, and Robert Richey, 1701 Transit Tower, archts. W. E. Simpson Co., Milam Bldg., and Halsey & Royer, Transit Tower, engrs.

LOW BIDDERS

Tex., Austin—PRINTING SHOP—Von Boeckmann-Jones Co., 110 E. 9 St., July 26, printing shop, from Leslie F. Crockett Constr. Co., 112 Academy Dr., **$126,299.** CD 7/13.

Wis., Green Bay—GARAGE—Olson Transportation Co., 200 Mather St., July 22, 1 story, 102x238 ft., concrete block, brick, steel garage, concrete fdn., from De Coster Constr. Co., 137 James St. CD 7/20.

CONTRACTS AWARDED

Ala., Dothan — MILL — Hedstrom Union Co., c/o contractor, mill addn., to Chapman Constr. Co., Dothan, Approx. **$200,000.** Bids 7/21. CD 7/11.

Conn., Hamden—FACTORY—Himmel Brothers, 1409 Dixwell Ave., 1 story, 50x200 ft., brick, steel, concrete construction office factory, Dixwell Ave., to C & J Constr. Co., 159 Winthrop Ave., New Haven. Approx. **$72,000.**

Fla., Miami Beach—SUB-STATION—Florida Power & Light Co., Ingraham Bldg., Miami, electric sub-station, Harding Ave., to Berry & Son, Inc., 1610 Lenox Ave., Approx. **$50,000.**

Ill., Chicago — FACTORY — Bowman Dairy Co., 416 N. Whipple, Zone 12, brick, concrete, steel factory, to Carroll Constr. Co., 333 N. Michigan St., Zone 1. **$150,000.** Awarded 7/27. Leon E. Stanhope, 800 Davis St., Evanston, archt. CD 7/21.

Ill., Chicago—FREIGHT SHEDS—Chicago Freightcar Parts Co., 1531 W. 119 St., Zone 43, steel car shed, own forces, **$78,000.**

Ill., Chicago—FACTORY—Frigid Fluid Co., Grand Ave., Jefferson and Des Plaines St., Zone 6, 1 story, steel, brick, concrete factory, to Kinnaire Corp., 2816 W. Monroe St., Zone 12. **$200,000.** CD 5/13.

Ill., Chicago—WAREHOUSE—Renard Linoleum & Rug Co., 2815 W. 31 St., Zone 8, steel, concrete, brick warehouse, to Poirot Constr. Co., 2911 W. Pershing St., Zone 9, Approx. **$400,000.** Awarded 7/25. A. Epstein & Sons Co., 2011 W. Pershing St., Zone 9, archts.

Ill., Chicago—PLANT—Swift & Co., Union Stockyards, Zone 9, steel, concrete, brick ice cream plant, 7409 S. State St., Zone 19, to R. W. Bateman Constr. Co., 6225 N. Hermitage St., Zone 26. **$290,000.** CD 7/19.

Ind., Crown Point—CENTRAL STATION—Northern Indiana Public Service Co., 5265 Hohman Ave., Hammond, 50x70 ft. brick, steel central station to Fred C. Crowley & Sons, 4732 Calumet St., Hammond, **$175,000.** Hutton & Hutton, 5231 Hohman St., Hammond, archts.

Minn., St. Paul—WAREHOUSE, etc.—Fruehauf Trailer Co., 2180 University Ave., general contract 1 story, 61x242 ft. warehouse, office and shop addn., to Collins Constr. Co., c/o owner, **$80,000.** H. L. Wagner & Assoc., 15 W. 10 St., Kansas City, Mo., archts.

O., Cleveland—SERVICE—Kinsman Square Chevrolet, Inc., 3225 E. 93 St., 1 story, 80x150 ft., brick, service bldg., storage facilities, to A. M. Higley Co., 2035 E. 22 St., **$70,000.** Awarded 7/22. CD 12/10.

O., Cleveland—PLANT—Tinnerman Products, 2037 Fulton Rd., mfg. plant, office bldg., boiler house, parking area, c. conc. roads, sewers to Sam W. Emerson Co., 1836 Euclid Ave., **$900,000.** Bids 7/21, awarded 7/27. CD 7/13.

O., Shaker Heights—SALES and SERVICE—Gockle Oldsmobile Co., 14307 Kinsman St., Cleveland, 1 story, 70x70 ft. brick, steel auto sales and service bldg., to Higley Constr. Co., 2035 E. 22 St., Cleveland. **$150,000.** Outcalt, Guenther & Assoc., 13124 Shaker Square, archts. CD 11/24/47.

O., Steubenville — BAKERY — Nickels Bakery, Inc., Martins Ferry, 100x132 ft., brick, steel bakery addn., to Don M. Wyeth, 499 3 St., Washington, Pa., Approx. **$100,000.** C. Garey Dickson, Washington, Pa., archt.

O., Toledo—GRAIN STORAGE—Norris Grain Co., Produce Exchange Bldg., 10 steel grain storage tanks, 6 dks. and concrete work and bin bottoms, to John Naumann & Sons, 365 Parker St.; structural steel and steel tanks, to Graver Tank & Mfg. Co., 4809 Todd St., East Chicago, Ind. Approx. **$250,000.** Raymond C. Reese, 300 Sandusky St., engr.

Pa., Washington — BAKERY — Nickels Bakery, Inc., Martins Ferry, O., brick, steel bakery addn., to Donald M. Wyeth, 499 3 St., Approx. **$75,000.** C. Garey Dickson, 22 Main St., archt.

●**Pa., West Mifflin**—ADMINISTRATION LABORATORY — Westinghouse Electric Corp., Atomic Power Div., West Mifflin, 1 and 2 story, 130,000 sq. ft., masonry, and steel main laboratory and office bldg. at Bettis Field site, to Ragner Benson, Inc., 4744 W. Rice St., Chicago, Ill. **$1,690,637.** Bids 7/13. CD 7/7.

S. C., Columbia — SALES and SERVICE — Oliver Motor Co., c/o contractor, auto sales and service, to J. C. Heslep, South Carolina Bank Bldg., **$100,000. (Correction**—name of contractor). CD 7/20, under CA.

S. C., Gaffney — CHURCH, etc. — First Baptist Church, c/o contractor, church and sunday school, to Crosland Constr. Co., 1623 Harden St., Columbia, **$250,923.**

Tenn., Athens — WAREHOUSE — Hiawassee Tobacco Warehouse, c/o Chamber of Commerce, Athens, tobacco house, to W. E. Hamby, Athens, **$132,627.** Bids 7/25. CD 7/22.

Tex., Dallas—WAREHOUSE—Jax Beer Co. of Texas, 315 First St., warehouse, to A & M Constr. Co., Trinity Industrial Blvd., Approx. **$70,000.**

Tex., Dallas—LUMBER YARD, etc.—Lingo Lumber Co., 2630 San Jacinto St., Lumber yard and woodworking shop in Trinity Industrial zone, own forces. **$125,000.** CD 11/4/48

Tex., Greenville — PLANT — Greenville Industrial Development Fund, Inc., Greenville, peanut food products mfg. plant, own forces. **$90,000.**

Tex., Lamesa—FACTORY—Delta Mfg. Co., Lamesa, garment mfg. factory, to West-Tex Bldg. Corp., Lamesa. Approx. **$115,000.** CD 7/26.

Tex., Pharr—PACKING SHEDS—Mrs. I. N. Weir & Assoc., Pharr, reconstructing tomato packing sheds, own forces. **$110,000.** Valley Fruit Co., Pharr, lessee. CD 1/12.

Tex., Refugio—PLANT—Bennett Oil & Refining Co., Refugio, reconstruct topping plant, own forces. Approx. **$100,000.** CD 6/10.

Tex., Tyler—SALES and STORAGE—Caperton Refrigeration, Inc., 512 E. Erwin St., service, sales, storage, own forces. Approx. **$70,000.** Weber & Allgeier, 414½ S. Broadway, archts.

Tex., Tyler—DISTRIBUTION STATION—Cabell's Ice Cream & Dairy Stores, 620 Exposition St., Dallas, milk and products distr. station and refrigeration unit, Purchase and Hire. Approx. **$75,000.**

Wis., Manitowoc—PLANT—Herald-Times, 902 Franklin St., 2 story, bsmnt. L-shaped 42x62 ft., steel, brick newspaper bldg. addn., concrete fdn. and floors, to Kasper Constr. Co., 1203 N. 16 St. Approx. **$125,000.**

Ont., Dresden—FACTORY—National Hardware Specialties Co., G. D. McGorman, genl. mgr., Wallaceburg, 100x150 ft., brick, steel, concrete factory, own forces, **$100,000.**

Ont., Point Edward — PLANT — Chemical Valley Fabricating, Point Edward, first unit of plant, own forces, **$150,000.**

Que., Coleraine—MILL—St. Laurence Asbestos Co. Ltd., Coleraine, asbestos mill, to C. Douville, c/o owner. Approx. **$250,000.**

●**Que., Montreal** — WAREHOUSE — Dominion Sugar Co. Ltd., 1410 Montmorency St., design and construction warehouse, to F. H. McGraw & Co. of Canada Ltd., 276 St. James St. **$1,000,000.** CD 8/2.

UNCLASSIFIED

BIDS ASKED

August 15

Ont., Kingston—ARENA—W. J. Watts, 187 Princess St., 227x337 ft., concrete, brick, steel arena, for Community Health & Recreation Centre, 187 Princess St., $450,000. Drever & Smith, 81 Brock St., archts.

August 17

Fla., Miami—SWIMMING POOLS, etc.—City, O. P. Hart, mgr., Courthouse, swimming pools in Gerry Curtis Park and Dixie Park; 4,300 lin. ft. curbing, 7,400 lin. ft. sidewalks, 18,000 sq. yd. paving for parking areas and driveways in Gerry Curtis Park.

About August 18

Conn., New Haven—BATHING PAVILION—City Park Dpt., Hall of Records, 125x350 ft. brick, rein.-con., steel bathing pavilion on concrete piles, incl. lockers, individual bath houses, showers, Lighthouse Point, $300,000. Brown & Von Beren, Inc., 295 Sherman Ave., archts.

August 19

N. Y., Brooklyn—RAILROAD—Bd. Transportation, 250 Hudson St., New York, Zone 13, altering Broadway-Fourth Ave. Rapid Transit Railroad, between 3 and 4 Sts. to permit widening of 4 Ave.

August 23

Kansas—RURAL DISTRIBUTION LINES—The Western Co-operative Electric Assoc. Inc., H. E. Manis, mgr., P. O. Box 368, Wakeeney, labor for approx. 265 mi. rural distr. lines. Frank Horton & Co., Lamar, Mo., engrs.

Tex., Orange—WHARF, etc.—City and The Wharf & Dock Comn., Orange, wharf and dock imprvs., incl. railway approach trestle, dock apron. $75,000. Plans deposit $25. Charles P. Smith Assoc., Bancroft Bldg., engrs. CD 6/27.

†**Washington** — TROLLEY BEAM—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars Odair, Wash., structural-steel trolley beam for Grand Coulee Pumping Plant; structural-steel hatch covers for Units R-2 and R-8, Grand Coulee Pumping Plant, Columbia Basin Proj., Spec. 2750. L. N. McClellan, ch. engr.

Bids Asked

Pa., Phila. — SWIMMING POOL — Umberto Innocenti & Richard K. Webel, archts., N. Hampstead Turnpike, Roslyn, N. Y., swimming pool for Mrs. Eleanor Widener Dixon, Spring Ave. and Serpentine Lane, Jenkintown. Approx $75,000.

SOON LETS CONTRACT

Alabama — RURAL DISTRIBUTION LINES —Joe Wheeler Electric Membership Co-operative, Hartselle, soon lets contract 285 mi. rural distr. lines in Lawrence and Morgan Counties. Plans deposit $25. A. D. McWhorter, Jr., 2535 Franklin Rd., Nashville, Tenn., engr.

LOW BIDDERS

Calif., San Francisco—PLAYGROUND, etc — Recreation Comn. of City and San Francisco Co., 61 Grove St., July 26, Burnett Playground recreation center, incl. 80x108 ft. rein.con. field house and 82x107 ft. frame gymnasium from Elvin C. Stendell, 26 and Kansas Sts., **$300,000;** St. Mary's Playground, from A. W. Baum, 1890 Jefferson St., **$143,488.** CD 7/12.

●††**Colorado** — TUNNELS, etc. — Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Aug. 2, constr. Olympus and Pole Hill Tunnels and access roads, Estes Park-Foothills Power Aqueduct, Colorado Big-Thompson Proj., Larimer Co., Spec. 2722. Tom Wunderlich Constr. Co., 206 Patterson Bldg., Omaha, Neb., **$4,787,874.** CD 6/30.

Colo., Grand Junction — STADIUM — City, July 19 sports stadium in Lincoln Park, from White Constr. Co., Grand Junction, **$52,954.** Est. $60,000. Smith, Hegner & Moore, 132 S. Fourth St., archts. and engrs.

Ia., Creston—SWIMMING POOL—City, City Hall, July 11, swimming pool, from Utilities Constructors, Lincoln, **$99,183.** CD 6/30.

Ia., Washington—LAKE—State Conservation Comn., 914 Grand St., Des Moines, clearing and earth moving for Honey Creek Lake, near Brighton, Washington Co., from E. M. Duesenbergh, Inc., Clear Lake, **$257,028.** Est. $404,000. CD 6/16.

Nebraska—RURAL DISTRIBUTION LINES —Consumers Public Power Dist., Columbus, July 25, rural distr. lines in Kearney and Humboldt, via Beatrice, from J. R. Foree, Topeka, Kan., **$94,941;** line construction and re-construction in vicinity of Milford and Exeter, from Commonwealth Electric Co., 1901 Y St., Lincoln, **$131,603.** CD 7/5.

North Dakota — RURAL DISTRIBUTION LINES—McKenzie Electric Co-operative, Watford City, July 22, labor for 362.4 mi. rural distr. lines, McKenzie Co., from I. O. Tiegen Constr. Co., 1354 University Ave., St. Paul, Minn., **$97,421.** CD 7/20, under LB.

Tenn., Dyersburg—GAS SYTEM—City, July 14, natural gas sys., from Sullivan, Long & Hagerty, 2026 6 Ave. N., Bessemer, Ala., **$713,687.** CD 7/5.

Wash., Seattle—LIGHT MANHOLES, etc.— City-County-City Bldg., Zone 4, rejected bids July 13, city light manholes and underground ducts, LB. **$72,746.** CD 7/20, under LB.

Wash., Seattle—FOUNDATIONS, etc.—City, County-City Bldg., bus and equipment foundations and installing equip. at City Light Gorge Switching Station, from T. N. Buchanan Co., Inc., 835 W. 48 St. **$58,153.** CD 7/26.

CONTRACTS AWARDED

Ala., Jasper—GAS SYSTEM—City, natural gas sys., to C. E. Adams, Box 1730, Birmingham. **$456,120.** Bids 7/26. CD 7/15.

†**Arizona-Nevada** — TOWERS, etc.—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., foundations and erecting steel towers for Mesa-Coolidge, 230-kv transmission line. Davis Dam Proj., Spec. 2670, to Mark Cockrill Contr. Co., 1917 W. Grant St., Phoenix, Ariz., **$164,642.** Bids 6/16, awarded 7/20. CD 6/23, under LB.

Arkansas—RURAL DITRIBUTION LINES —Arkansas Valley Electric Co-operative Corp., Wallace M. Milton, mgr., Ozark, 291 mi. rural distr. lines, Yell, Logan, Crawford, Pope, Franklin, Johnson, Le Flore, Sebastian

and Scott Counties, to L. O. Brayton & Co., Dyersburg, Tenn., Approx. **$300,000.** Bids 7/19. CD 7/13.

Georgia — RURAL DISTRIBUTION LINES —Carroll Electric Membership Corp., Carrollton, 207 mi. rural distr. lines in Carroll, Haralson, Heard, Paulding and Polk Counties, to Roy Richards Constr. Co., Carrollton, **$182,337.** Bids 7/29. CD 7/28.

Ill., Alton—DRIVE-IN THEATRE—Henry H. Beck, Charley Goldman and Joe Goldfarb, c/o State Theatre, Alton, drive-in theatre, site 5 mi. east and south of down town section of here, separate contracts, Approx. **$100,000.**

Ill., Lovington — DRIVE-IN THEATRE—Hector Tandel, Lovington, drive-in theatre, Lowell Hettinger property west of city limits, separate contracts. Approx. **$60,000.**

Ill., Skokie—MAUSOLEUM—Memorial Park Cemetery, Skokie Hy. at Dempster St., concrete, 70x100 ft. mausoleum, separate contracts. Approx. **$300,000.** Ivan Petersen, 2130 First St., Glenview, archt.

Ind., Geneva — DRIVE-IN THEATRE— W. R. Meller & Clyde Nihiser, c/o Star Theatre, Geneva, Limberlost Drive-In Theatre, site north and west of city, to McClain Constr. Co., Geneva. Approx. **$60,000.**

Iowa — RURAL DISTRIBUTION LINES— Monona County Rural Electric Co-operative, G. R. Gerking, mgr., Onawa, 168.2 mi. rural lines, 31.35 mi. conversions lines, Monona, distr. lines, 9.61 mi. secondary, and service Crawford, and Woodbury Counties. Proj. Iowa 16 H&K. Monona, to Hoak Constr. Co., 621 63 St., Des Moines. **$265,756.** Bids 7/26. CD 7/21.

Nebraska — PIPELINE — Corpus Simmons Drilling Co., Casper, Wyo., oil pipeline from Gurley Oil Field to Oshkosh. Owner builds. **$750,000.**

Ohio and Indiana — PIPELINE — Buckeye Pipeline Co., Lima, O., 140 mi. 8 in. pipeline from Speedway, Ind., via Muncie, Ind. to Lima, O., to H. L. Gentry Constr. Co., Afton, Mich. Approx. **$700,000.** CD 7/9/48.

Texas—GAS MAIN—Lone Star Gas Co., 1915 Wood St., Dallas, 70 mi. natural gas main between near Pottsville via Goldsmith to city limits of San Saba, force-account. Approx. **$375,000.** CD 5/15.

Texas—OIL LINE—Texas Pipe Line Co., Texas Co. Bldg., Houston, 35 mi. 8 in. pick-up crude oil line Chico westward to Bryson field, Wise Co., own forces, approx. **$300,000.** CD 7/26.

Tex., Houston—PARK IMPROVEMENTS— City, City Hall, 900 Brazos St., Hermann Park Lake imprvs., incl. drainage, enlarging the lake, etc., force-account. **$55,000.** CD 9/30/43.

●**Utah and Idaho**—PIPELINE—Salt Lake Pipe Line Co., Utah Oil Bldg., Salt Lake City, Utah, approx. 125 mi. oil products pipeline between Salt Lake City, Utah and Burley, Idaho, to Smith Contg. Co., Fort Worth Natl. Bank Bldg., Fort Worth, Tex., **$2,790,000**; approx. 155 mi. oil products pipeline between Burley and Boise, Idaho, to Oklahoma Contg. Co., Mercantile Bank Bldg., Dallas, Tex. and Grafe-Callahan Constr. Co., 714 W. Olympic St., Los Angeles, Calif. **$3,210,000.** CD 7/11.

Wis., Fond du Lac—DRIVE-IN THEATER— S. G. Costas Enterprises Inc., 572 Elizabeth St., drive-in-theater, to Steffes Constr. Co., Dond du Lac. Approx. **$150,000.**

Ont., Goderich—ICE ARENA—Municipality, artificial ice arena, to Hipel Constr. Co. Ltd., 307 Hespeler St., Preston, **$146,000.** Bids 3/4. CD 2/25.

Ont., Matheson—MINE DEVELOPMENT—P. B. Zevely, 581 E. Town St., Columbus, O., U. S. A., asbestos bearing claim development, Munro Twp., to Canadian Longyear Ltd., North Bay. Approx. **$100,000.** E. L. McVeigh, Box 425 Haileybury, engr.

Que., Buckingham—PHOSPHATE ORE DEPOSIT DEVELOPMENT—Quebec Smelting & Refining Co. Ltd., 215 W. St. James St., Montreal, phosphate ore deposit development, own forces. Approx. **$100,000.**

PROPOSED PROJECTS

WATER SUPPLY

La., Lockport — Town, Town Hall, WW imprvs., **$107,500.** J. B. McCrary Engrg. Corp., 22 Marietta St., Bldg., Atlanta, Ga., consult. engr.

Mont., Helena—City, City Hall, replacements and imprvs., to city water sys., incl. c. i. mains, rebuilding and recoofing Woolston Reservoir. **$980,000.** CD 10/21/48.

O., Middletown—City, City Hall, reservoir and approx. 1,200 lin. ft. waterlines. **$100,000.** Floyd G. Brown, 196 S. Main St., Marion, consult. engr. CD 12/27/43.

Pa., Sharon—Shenango Valley Water Co., Sharon, 1,500,000 gal. water storage tank in Wengler Ave. School Dist.

Tex., Burnet—City, voted bonds, WW **$150,000.** The Marvin Turner Engrs. Nalle Bldg. Annex, Austin, consult. engrs. CD 7/19.

Tex., Falfurrias—City, R. R. Scott, mayor, imprvs. expanding WW. **$100,000.**

●**Tex., Ranger**—Ranger Water Dist., Ranger, concrete and earth dam on Leon Creek. Approx. **$2,500,000.** Freese & Nichols, 407 Danciger Bldg., Fort Worth, consult. engrs.

Tex., Sundown—City, Lester Dudley, mayor, defeated bonds July 16, WW sys. extens. **$100,000.** Parkhill & Cooper, Lubbock, consult. engrs.

Ont., Ottawa—Municipality, revamping waterlines, from filtration plant to Queen St. pumping station, **$430,000.** W. E. MacDonald, city engr.

Ont., Ottawa—Secy. Bd. Control, c/o City, supply and installation C-line to deliver main water supply from filtration plant to Queen St pumping station, renovation A line and B line. Approx. **$430,000.** W. E. MacDonald, c/o owners, engr.

●**Que., Quebec City**—City, F. X. Chouincard, city clk., City Hall, 42-in. watermain. Approx. **$3,100,000**, artesian wells, **$2,000,000.** Ed. Hamel, c/o owners, engr. CD 9/30/43.

SEWERS, WASTE DISPOSAL

●**Calif., Eureka** — City, City Hall, voted **$2,030,000** bonds, incl. 3 treatment plants, $679,600 and replacement of existing sewer lines. CD 3/11.

Calif., Pomona — City, Pomona, sanitary sewers in Butterfield Rd., Phillips Blvd., Signal Dr., **$193,104.** Fred L. Froehde, city engr.

Calif., San Clemente—City, San Clemente, voted **$240,000** bonds sewage treatment plant. Currie Engr. Co., Anderson Bldg., San Bernardion, engrs. CD. 6/16.

Neb., Lincoln—City, City Hall, storm drainage in Belmont Dist. **$130,000.** D. L. Erickson, city engr. CD 4/22/48.

Okla., Midwest City—City, Midwest City, bond election August 23, sewage disposal plant. **$132,900.** J. M. Plank, 1323½ N. Robinson St., Oklahoma City, consult. engr.

Tex., Burnet—City, voted bonds, sanitary sewers, **$100,000.** The Marvin Turner Engineers, Nalle Bldg. Annex, Austin, consult. engrs. CD 7/19.

Tex., Falfurrias—City, R. R. Scott, mayor, imprv. and expanding sanitary sewer sys. **$125,000.**

Tex., Freeport — Brazosport Independent School Dist., Freeport, sanitary sewers, **$60,000;** sewage disposal plant, **$75,000.**

STREETS AND ROADS

O., Akron—M. L. Davis, serv. dir., Municipal Bldg., exten. Rhodes Ave. across the Ohio Canal to Boulevard St. **$55,000;** exten. Grant St., through to Center St., to provide entranceway to new Akron Union Station 40 ft. concrete street, **$75,000.**

O., Lakewood and Cleveland—Cities of Lakewood and Cleveland, Cuyahoga Co. Courthouse, Cleveland, wid'n. resurf. W. 117 St. from Edgewater Dr. to Madison Ave. **$200,000.** H. Bartells, City Hall, Lakewood, city engr. J. C. Wenrick, City Hall, Cleveland, city engr. Albert S. Porter, Standard Bldg., Cleveland, co. engr.

Tenn., Elizabethton—Carter Co., c/o James Odom, County Hy. Dpt., Elizabethton, imprv. various county roads. **$153,000.**

●**Tex., Houston**—City, City Hall, 900 Brazos St., wid'n., repaving and realigning Buffalo Dr. westward from Lamar and Dallas to Shepherd Dr. **$800,000;** wid'n. and repaving Navigation Blvd. between U. B. & R. Ry. tracks and Wayside Dr. **$500,000.** G. L. Fugate, city engr. CD 11/22/44.

Tex., Newton — Newton County, Newton, voted bonds, general road imprvs., grading, drainage, surf. Dist. 4, **$100,000;** street and road repairs and surf., concrete sidewalks in Twp. of Newton. **$50,000.**

Tex., Sundown—City, Lester Dudley, mayor, defeated bonds July 16, street paving and imprvs. **$200,000.** Parkhill & Cooper, Lubbock, consult. engr.

AIRPORTS AND AIRBASES

✚**Ky., Hopkinsville**—FAMILY QUARTERS— U. S. Engr., 830 W. Broadway, Louisville, 24 family quarters incl. control tower and security fence at Campbell Air Force Base. **$496,000.**

●✚**Mass., Chicopee** — LIVING QUARTERS — U. S. Purch & Contg. Office, Base Hangar, Westover Field, living quarters, personnel of Westover Field. **$1,584,000.**

LATIN AMERICA

B. W. I., Port of Spain—Soconusco Quarries & Development Co. Ltd., Port of Spain, plans cement producing plant. $300,000.

Honduras, Tegucigalpa—Municipality, plans 12 to 22 in. water pipeline. $200,000.

Mexico, Durango—Enladadora y Empacadora de Durango S. A. Gante, 15-115, Mexico, D. F., Mexico, plans cattle by-products factory. $350,000.

Mexico, Mexico City—Cia. Refrigeradora Elderado, S. A., Madero, 40, Mexico D. F., plans meat and seafood refrigeration plant. $300,000.

Mexico, Mexico City—Antonio Del Valle, 20 de Noviembre, 42, Mexico, D. F., plans by Kunhardt y Capilla, 5 de Mayo, 32, Mexico, D. F., 4,000 seat cinema. **$400,000.**

Mexico, Mexico City—Jorge Russek Igielsky, Sanchez Azcona, 219 (Col. Navarte), Mexico, D. F., Mexico, plans masonite rug-carpet factory. $250,000.

Mexico, Mexico City — Philips Mexicana, S. A., San Juan de Letran, plans radio parts factory. **$350,000.**

Mexico, Mexico City—Syntex, S. A., Laguna de Mayran, 413, Mexico, D. F., Mexico, plans specialized chemical factory. **$300,000.**

Mexico, Mixcoac—Duka, S. de R. L., Van Dyck, 40, Mixcoac, D. F., plans hypodermic needle factory. **$200,000.**

Mexico, Texcoco—Sales de Sodio Texco, S. A., Donato Guerrali, office, 306, Mexico, D. F., plans aynhydrous carbonate of sodium factory. **$300,000.**

FOREIGN

●**Scotland, Glasgow**—Municipality, construct twin tunnels beneath River Clyde at Whiteinch. **$12,300,000.**

PUBLIC BUILDINGS

Ala., Attalla — SCHOOL — City Bd. Educ., Attalla, plans by Wilmot C. Douglas, 226 N. 14 St., Birmingham, high school, over **$250,000.**

●**Ala., Montgomery**—OFFICE—State, Montgomery, state office bldg., **$1,000,000.**

Calif., Bellevue—SCHOOL—Bellevue Union Elementary School Dist., Bellevue, voted $124,000 bonds 15 classroom elementary school, **$351,793.** C. A. Caulkins, Rosenberg Bldg., Santa Rosa, archt.

●**Calif., Berkeley**—SCHOOLS—Bd. Educ., 1414 Walnut St., plans by Kump & Falk, 9 Main St. San Francisco, Franklin School classroom wings, 1, 2 and 3 and auditorium, cafeteria, **$738,800,** Jefferson School incl. 13 classrooms, library, admin. unit, cafeteria, auditorium, **$528,800.** CD 11/17/48.

Calif., Davis—POULTRY BLDG., etc.—Bd. Regents, University of California, Berkeley, plans by Donald Powers Smith, 583 Market St., San Francisco, 2 story, rein.-con. poultry, husbandry bldgs. on Davis Campus. **$500,000.** CD 8/24/44.

Calif., El Centro — SCHOOL — El Centro School Dist., El Centro, plans by Albert E. Hansen, 257 S. Spring St., Los Angeles Wilson School, **$475,000.** CD 12/13/45.

●**Calif., Long Beach**—COLLEGE ADDNS.— Long Beach City School Dist., plans by J. J. Jones, 501 Terminus St., gymnasium and swimming pool, **$1,209,500;** arts, admin., life sciences, music bldgs. at Long Beach City College, **$922,000.** CD 10/8/45.

Calif., Riverside—HIGH SCHOOL—Riverside City School Dist., 3450 9 St., plans by Heitschmidt & Matchan, 449 S. Beaudry St., Los Angeles, junior high school for West Riverside, **$400,000.** CD 5/13.

Calif., San Mateo—MEMORIAL BLDG.— San Mateo County Fair and Floral Fiesta, 2501 Pacific Blvd., San Mateo, County Veterans memorial bldg., to incl. little theatre, meeting rooms, etc., **$500,000.** CD 4/26/48.

Del., Farmhurst—HOSPITAL—Delaware State Hospital Trustees, Farmhurst plans by G. Morris Whiteside 2nd, 2162 du Pont Bldg., Wilmington, 3 state hospital bldgs., **$675,000.** CD 3/11/46.

●**Ill., Freeport**—SCHOOLS—City, Bd. Educ., R. L. Shafer, supt. schools, **$2,000,000** bond election October 4, junior high school and 2 elementary schools, **$2,000,000.** Childs & Smith, 20 N Wacker Dr., Chicago, 2, archts. CD 7/14.

In., Vinton—SCHOOL—Independent School Dist., Bd. Educ., Katherine Secy., Vinton, plans by Keffer & Jones, Masonic Temple Bldg., Des Moines, brick, concrete, stone high school, **$600,000.** CD 4/8.

Ky., Glasgow — SCHOOL — Glasgow Bd. Educ., Glasgow, negro elementary and high school, Approx. **$300,000.**

La., Abbeville—COURT HOUSE—Vermillion Parish Police Jury, plans by A. Hays Town, Masonic Bldg., Baton Rouge, court house addns., and alterations, **$750,000.** CD 4/28/48.

●**Mass., Boston**—City of Boston Housing Auth., 10 Post Office Square, plans by M. A. Dyer Co., 8 Beacon St., 3 story veterans housing proj., Archdale Rd., Roslindale, incl. 252 units, **$2,500,000;** plans by John M. Gray Co., 175 High St., 2 story row houses, veterans housing proj., Centre and Weld Sts., Roslindale, incl. 130 units, Approx. **$1,300,000.**

Mass., Norfolk—SCHOOL—Town, School Dpt., supt. of schools, plans by M. A. Dyer Co., 8 Beacon St., Boston, 2 story, brick elementary school, Approx. **$250,000.**

Mass., South Peabody—HOUSING—City of Peabody Housing Auth., A. Arsenault, chn., Peabody, plans by Kennedy & Smith, 687 Boylston St., Boston, 68 unit housing proj. Lynn St., **$680,000.** CD 3/24.

Mo., Overland (St. Louis, Zone 14, P. O.)—SCHOOL—Ritenour Consolidated School Dist., Bd. Educ., G. D. McAllester, pres., 8740 Forest Ave., Overland, and Arthur A. Hoesch, supt., plans by Wm. B. Ittner, Inc., 408 Bst Educ., Bldg. 911 Locust St., St. Louis, Zone 1, Mo. archt. and engr., brick and concrete addns. to Iveland School, Dyer and Oak Ct., Buder School Baltimore and Gray Aves. and De Hart School, 3598 Wismer St., **$300,000.** CD 7/19.

Neb., Omaha—GARAGE—Metropolitan Utilities Dist., 18 and Harney Sts., garage, **$500,000,** J. C. Detweiler, c/o owner, engr.

N. Y., Jackson Heights—LIBRARY—Dpt. Pub. Wks., Municipal Bldg., New York, Zone 7, plans by Simeon Heller, 135-45 Roosevelt Ave., Flushing, 2 story 66x100 ft. library at 81 St. near 37 Ave. Proj. L-36. $320,000. CD 8/17/45.

O., Chardon—Geauga Co. Comrs., Courthouse, **$750,000** bond election Nov. 8, county hospital. CD 11/19/48

O., Cuyahoga Falls—HOSPITAL—State Dpt. P. Wks., C. L. Sherwood, dir., State Office Bldg., Front St., Columbus, plans by T. Sagadencky, 1423 Sackett Ave., 3 story, 41x147 ft., hospital 60x85 ft. wing, **$563,970.** Mayer & Valentine, 2036 E. 22 St., Cleveland, consult. engrs. CD 1/19.

O., Hillsboro—SCHOOL—Bd. Educ., Hillsboro, **$330,000** bond election Nov. 8, elementary school.

O., Lancaster — HOSPITAL ADDN — City and County, Lancaster, plans by Dan. A. Carmichael, Columbus, Lancaster-Fairfield Hospital addn., **$750,000.** CD 11/11/48

O., Shaker Heights—TRANSIT STATION—City, Dpt. Transportation, P. K. Jones, City Hall, Moreland & Lee Rds., plans by Dalton & Dalton & Assoc., Old Arcade Bldg., Cleveland, transit station and retail stores and office, **$250,000.**

Pa., North Wales—SCHOOL—North Wales Boro School Bd., North Wales, school. **$250,000.**

Tenn., Nashville — SHOP — State National Guard, State Capitol, plans by Steinbaugh & Wheeler, Presbyterian Bldg., maintenance shop at Thompson Lane Center. **$200,000.** CD 2/11.

Tex., Arlington — CLASSROOM — Arlington Independent School Dist., W. R. Wimbish, supt., Arlington, voted bonds, masonry classroom. **$250,000.** CD 7/15.

Tex., Corpus Christi—GYMNASIUM—Corpus Christi Independent School Dist., Del Mar College Dpt., Corpus Christi, plans by Nat W. Hardy, 29 Country Club Pl., gymnasium. **$250,000.** CD 5/13.

Tex., Dalhart—HIGH SCHOOL—Dalhart Independent School Dist., Dalhart, reconstruct high school. **$750,000.**

●**Tex., Houston**—HOUSING—Houston Housing Auth., George Neal, chn., San Felipe Courts, plans by Wyatt C. Hedrick, 5201 Fannin St., and Kenneth Franzheim, 2306 Crawford St., Proj. 1, 300 housing units, **$3,750,000;** plans by Finger & Rustay and R. G. Schneider, 4 N. Lindsey, Natl. Standard Bldg., Proj. 2, 342 housing units, **$4,275,000;** plans by H. Edwin Maddox, Jr., C. A. Johnson, Eugene Werlin, 3501 Buffalo Dr., Proj. 3, 300 housing units, **$3,750,000;** plans by Frank C. Dill and Marvin C. Moore, 2008 W. Alabama St., Proj. 4, 300 housing units, **$3,750,000;** plans by Wilson, Morris & Crain, 3212 Smith St., H. A. Stubee, 3908 Main St., and Irving R. Klein, 1303 Austin St., Proj. 5, 358 housing units, **$3,850,000.** Wyatt C. Hedrick, 5201 Fannin St., consult. archt. CD 7/14.

Tex., Kingsville — HOSPITAL — Kleberg County, Courthouse, Kingsville, plans by Joe G. Smyth, Jr., 1806 Alamedo St., Corpus Christi, modernizing existing cold portion county hospital, new nurses home, masonry type. **$250,000.**

Tex., New Braunfels — SCHOOL — New Braunfels Independent School Dist., Dr. E. A. Sahm, supt. Schools, New Braunfels, Junior or Senior High School, **$250,000;** remodeling, addn. Lamar and Carl Schurz School. **$250,000.**

Tex., Temple—City, plans by H. E. Turley & Lee R. Buttrill, Prof. Bldg., P. O. Box 45, elementary school remodeling and addns., **$300,000;** Junior-Senior High School for negroes, **$300,000;** High School. **$400,000,** masonry constr.

B. C., Vancouver—FIRE HOUSE—City, 453 W. 12 Ave., plans by Townley & Matheson, 1376 Hornby St., 2 and 3 story rein -con. fire house. **$300,000.** CD 4/18

B. C., Victoria—OFFICE—British Columbia Power Comn., 918 Government St., plans by H. Whittaker, 710 Johnson St., 2 story, rein.con. T-shaped office. Approx. **$300,000.**

Newfoundland, St. Johns—DWELLINGS—Municipality, St. Johns, 160 dwellings, **$700,000.**

Ont., Hamilton—SCHOOL—Bd. Educ., 259 Hunter St., plans by George T. Evans, 36 James St. S., senior public school on Walters St., **$325,000.** CD 1/4/46.

Que., Chicoutimi—SCHOOL—School Domn., J. E. Blackbun, secy., Chicoutimi, 2 story, concrete, brick school and residence, Ste. Therese St., Approx. **$250,000.**

COMMERCIAL BUILDINGS

Calif., Millbrae — MARKET — Bouskos Bros., c/o Bliss & Hurt and Trudell & Berger, archts., 717 Market St., San Francisco, 1 story mezzanine, concrete, steel truss 180x180 ft. market with parking area. **$300,000.** CD 6/28.

Del., Wilmington—AUDITORIUM—Scottish Rite Temple, 812 Market St., Wilmington, plans by G. Morris, Whiteside, 2nd. Du Pont Bldg., masonic auditorium. **$400,000.**

Fla., Hallandale—CLUBHOUSE—Gulfstream Park Racing Assn., Inc., Hallandale, clubhouse, **$500,000.**

Ia., Council Bluffs—DEPOT—Chicago, Burlington & Quincy R R. H. R. Clarke, ch. engr., 547 W. Jackson Blvd., Chicago, and Union Pacific R. R W C Perkins ch. engr., 1416 Dodge St. Omaha, Neb., mail transfer depot, rein.-con. transfer platform, track re-arrangement. **$200,000.**

●**Md., Baltimore** — APARTMENT HOUSE — Broadview Realty Inc., 2301 Maryland Ave., plans by Palmer, Fisher, Williams & Nes, 1020 St. Paul St., 13 story, bsmnt., 54x130x393 ft. apartment house, 453 families, 135 W. 39 St., **$2,500,000.**

Mass., Boston—HOSPITAL—Massachusetts General Hospital, Fruit St., plans by Coolidge, Shepley, Bulfinch & Abbott, 1 Court St., addn. to White Bldg. at hospital, Approx **$250,000.**

Mo., St. Louis—HOSPITAL—Bd. Trustees, Frisco Employees Hospital Assn., c/o John T. Wilson, bus. mngr., Frisco Hospital, 4960 Laclede Ave., Zone 8, plans by Preston J. Bradshaw & Assoc., 1800 Olive St., St. Louis, Zone 3, brick, rein.-con. Frisco Hospital addns. and alterations, **$600,000.** CD 4/20.

Neb., Lincoln — CHURCH — Westminster Presbyterian Church, 2110 Sheridan St., plans by Hazen & Robinson, Stuart Bldg., church addn. **$269,000.** CD 6/13.

●**N. J., Millburn**—SHOPPING CENTER—Prudential Insurance, 763 Broad St., Newark, community shopping center on 100 acre site along Morris Turnpike, **$5,000,000.**

N. J., Trenton—CHURCH—St. Anthony's Roman Catholic Church, 626 S. Olden Ave., Trenton, plans by John Harmon, Harvey, 12 N. Warren St., Trenton, church, over **$250,000.**

N. Y., Jamaica—SCHOOL—Our Lady of The Cenacle R. C. Church, 136 St., and 93 Ave., plans by William Boegel, 516 Fifth Ave., New York, Zone 18, 3 story school at 136 St. near 87 Ave. **$350,000.**

N. Y., New York—APARTMENT—A. & A. Spirer Co., 1777 Grand Concourse, Zone 53, plans by S. J. Kessler & Sons, 118 E. 28 St., Zone 16, 6 story apartment 162 St., near Grand Concourse. **$250,000.**

N. Y., New York—APARTMENT—Vicbar Realty Corp., 125 E. 42 St., Zone 7, plans by H. I. Feldman, 415 Lexington Ave., Zone 17, apartment 505 E. 82 St. **$250,000.**

Pa., Coatesville—SUPER MARKET—Food Fair, Inc., 2223 E. Allegheny Ave., Phila., super market and parking lot. **$250,000.** Louis Kasoff, c/o owner, archt.

●**Pa., Pittsburgh**—APARTMENTS—R. W. Paul, Dravosburg, plans by Philip Friedman, 121 S. Negley Ave., 20 six story bsmnt., 40x 125 ft. brick and tile apartments in Scott Twp. near here. **$10,000,000.**

●**Tex., Dallas**—OFFICE—T. F. Hart Investment Co., c/o L. A. Hart, pres., 210 N. Preston St., plans by George L. Dahl, 2101 N. St. Paul St., 16 story bsmnt. office, Central Blvd. **$3,000,000.**

Tex., Harlingen — HOSPITAL — Valley Medical Center, Harlingen, plans by Cocke, Bowman & York, 1220 W Harrison St., and A. H Woodridge, Anthony Bldg., Brownsville, hospital. **$824,000.** CD 7/14

●**Tex., Houston**—COMMERCIAL BLDG.—Olson Bros. M. Esperson Bldg., No. 1, 94x140 ft 13,160 sq. ft. masonry commercial bldg., southeast corner of Rice and Morningside. **$250,000** (immediate construction); No. 2, 50x 262 ft. 14,000 sq. ft. masonry commercial bldg., northwest corner of Times and Morningside. **$260,000** (construct soon); 1 story masonry group of stores, in the village near West University Pl. **$550,000** (later construction).

Tex., San Antonio—APARTMENTS—Ben Minden c/o L. Hartman & Co., archts., 405-6 Texas Theatre Bldg., 2 masonry apartments, concrete slab fdn. South 4 St. **$250,000.**

Tex., Sweetwater — REFINERY — Gulf Oil Co., Sweetwater, refinery expans. **$500,000.**

Wis., Madison—TEMPLE—Labor Temple Assn., 309 W. Johnson St., plans by Lewis Siberz, 103 W. Mifflen St., 3 story labor temple, over **$300,000.**

Alta., Lacombe — ECONOMICS DPT. — Canadian Union College, Lacombe, home economics dpt., cafeteria, etc., **$250,000.**

N. B., Chatham — HOSPITAL — Hotel Dieu Hospital Bd., Chatham, hospital wing addn., **$335,000.**

Ont., Blenheim — COLLEGE — Reverend Capuchin Fathers, Blenheim, college, **$275,000.**

Que., Grand'Mere—CHURCH—Parish of St. Jean Baptiste, Rec. G. Larue, cure., Grand-'Mere, plans by D. Deshaies, Nicolet, 85x138 ft. stone, concrete, steel church, corner 5 Ave. and 12 St., Approx. **$300,000.**

Que., Montreal—APARTMENTS—G. Daneau, 3720 Van Horne Ave., plans by C. Grenier, 170 Geneva Crescent, 45 brick, concrete apartments, Carlton Ave. **$500,000.**

●**Que., Montreal** — HOUSING — Reverend Sulpician Fathers, 116 Notre Dame W., housing proj., St. Hubert St. and Papineau Ave., **$1,000,000.**

Que., Shawinigan South — NOVICAT — Reverend White Fathers, 27 Ste. Foye Rd., Quebec City, novicat on St. Mathieu Rd., **$300,000.**

INDUSTRIAL BUILDINGS

Ind., Bedford — FOUNDRY — Allison Engrg. Co., 2100 W. 16 St., Indianapolis, foundry addns., on 28 acre tract. **$150,000.**

Ky., Bowling Green—PLANT—Derby Underwear Co., Bowling Green, plant addn. **$250,000.**

N Y., Long Island City — WAREHOUSE — McKesson & Robbins, 155 E. 44 St., New York, Zone 17, plans by Chapman, Evans & Delehanty, 50 Broadway, New York, Zone 4, warehouse and office at 22 St. southwest corner of 41 Ave. **$300,000.**

N. Y., New York—FISH MARKET—Rhode Island Corp., 16 E. 47 St., Zone 17, plans by Garrett J. Couchols, 456 Montrose Ave., Rutherford, N. J., fish market 95-101 South St. **$300,000.**

Ore., Heppner—GRAIN ELEVATOR—Morrow County Grain Growers Co-operative, Heppner, replacing grain elevator and 2 warehouses. **$500,000.**

Tex., Houston — WAREHOUSES — Felix Doran, Jr., 3916 Main St., Dallas, Warehouse No. 2, **$250,000;** Warehouse No. 3, **$275,000;** Warehouse No. 4, **$250,000,** brick, steel, rein.-con. type constr., adjacent Highland Industrial Center.

Man., Winnipeg—GARAGE—Dickson Motors Ltd., 630 Portage Ave., concrete, brick garage, **$200,000.**

N. B., Fredericton — TERMINAL AND GARAGE — S. M. T. Eastern Ltd., 1 Gibson St., bus terminal and garage repairs shop, North Carleton Ward. **$100,000.**

Ont., Toronto—PLANT—Kop Beverages, Ltd., Stewart A. Woods, vice pres., 342 Douglas Ave., beverage plant. **$100,000.**

Ont., Toronto — FACTORY — Parkdale Wines Ltd., 187 Bathurst St., plans by H. B. Kohl, 9 Richmond St., factory. **$500,000.**

UNCLASSIFIED

Arkansas—RURAL DISTRIBUTION LINES —North Arkansas Electric Co-operative, Inc., Salem, 344.5 mi. rural distr. lines, Fulton Co., **$344,000,** Allen & Haskail, 65 McCall Pl., Memphis, 3, Tenn., engrs.

●**Calif., Bakersfield** — FAIRGROUNDS EXPANSION—Fifteenth Dist. Agricultural Assn., Bakersfield, plans by Ernest L. McCoy, Hay Bldg., Kern County Fairgrounds expansion, incl. race track, 16,000 seat grandstand, various bldgs. and barns, **$3,000,000.**

Ga., Savannah — MAUSOLEUM — Hillcrest Memorial Park, Roy Hutten, pres., 1800 Wheaton St., 1,000 crypts mausoleum. Over **$250,000.**

Ill., Cairo—SWIMMING POOL—Fred Sullivan and Harry Young, c/o El Patio Club, U.S. 51, Patierdale 100x200 ft. rein.-con. swimming pool, bath house, etc., between El Patio Club and Cairo Drive-In theatre, U.S. 51, **$300,000.**

Mississippi—RURAL DISTRIBUTION LINES —Alcorn County Electric Power Assn., Corinth, 160 mi. rural distr. lines, Alcorn Co., **$160,000,** Allen & Haskail, 65 McCall Pl., Memphis, 3, Tenn., engrs. CD 2/28.

Mississippi—RURAL DISTRIBUTION LINES —Central Electric Power Assn., Carthage, 300 mi. rural distr lines sys. imprvs., Leake Co., **$623,000,** Bowman & Bowman, Greenwood, consult. engrs. CD 7/14

Mississippi—RURAL DISTRIBUTION LINES —East Mississippi Electric Power Assn., Meridian, 236 mi. rural distr. lines, Clarke Co., **$236,000,** Allen & Haskall, 65 McCall Pl., Memphis, 3, Tenn., engrs.

Mississippi — RURAL DISTRIBUTION LINES — Natchez Trace Electric Power Assn., Houston, 182 mi. rural distr. lines, sys. imprvs., headquarters facilities, Chickasaw Co. **$960,000.**

Nebraska—RURAL DISTRIBUTION LINES —Southwest Electric Membership Ass'n, Falisade, 290 mi. rural distr. lines, Chase, Dundy, Hayes and Hitchcock Counties, **$325,000.** Flora Eng. Co., 501 Jackson St., Topeka, Kans., consult. engrs.

N. Y., New York—FIELD HOUSE—Columbia University, 116 St. and Broadway, plans by Eggers & Higgins, 542 Fifth Ave., Zone 19, athletic field house, 533 W. 218 St., **$528,000.**

Ohio — RURAL DISTRIBUTION LINES — Licking Rural Electrification, Utica, 30 mi. rural distr. lines and sys. imprvs., Licking Co. **$245,000.** REA allot.

●**O., Columbus** — PARKING FACILITIES — City, Columbus, parking facilities, 200 x 1000 ft. Scioto Deck parking facility for 750 autos, incl. pedestrian foot bridge, **$1,500,000.**

O., Springfield — ROUNDHOUSE — Detroit, Toledo and Ironton R. R., F. W. Kasten, ch. engr., 4921 Calhoun Ave., Dearborn, Mich., roundhouse, **$750,000.**

Oklahoma—RURAL DISTRIBUTION LINES —Kiamichi Electric Co-operative, Wilburton, 132.9 mi. rural distr. lines, Latimer Co. **$132,-000.** REA allot. George C. Henry & Co., 1007½ Texas Ave., Shreveport, La., engrs. CD 5/27.

South Dakota — RURAL DISTRIBUTION LINES—Northern Electric Co-operative, Inc., 302 Western Union Bldg., Aberdeen. 603.5 mi. rural distr. lines, Brown Co. **$603,000.** REA allot. Buell & Winter, 508 Insurance Exchange Bldg., Sioux City, 13, Iowa, engrs.

Tenn., Chattanooga—FIRE ALARM SYSTEM—City, City Hall, voted bonds, fire alarm sys., **$500,000.** CD 5/16

Tenn., Nashville—GYMNASIUM—Fisk University, 17 Ave. N., plans by McKissick & McKissick, Morris Bldg., gymnasium, **$300,000.** CD 6/21/44.

N. B., Moncton—CUT OFF—Canadian National Railways, B. Wheelwright, ch. engr., 360 McGill St., Montreal, Que., 5 mi. cut off, across northern side of the city, yards on both sides main line to west of city, Town Planning Comm. of Greater Moncton, engrs.

Que., Montreal East—PUMPING HOUSES —McColl-Frontenac Oil Co., Ltd., Notre Dame St. E., pumping houses replacement, **$200,000.**

Proposal Advertisements see pp. 72 to 74

SEARCHLIGHT SECTION

U. S. Government

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2749) will be received by Bureau of Reclamation, Denver, Colorado, September 1, 1949, and then publicly opened for furnishing four 13.5-foot by 18.93-foot fixed-wheel gates for penstocks at Hungry Horse Dam, Hungry Horse Project, Montana. Delivery is desired within 400 days. For particulars, address Bureau of Reclamation, Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner.
(299)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2752) will be received by Bureau of Reclamation, Cascade, Idaho, August 31, 1949, and then publicly opened for furnishing labor and materials and performing all work for the construction of earthwork, structures, and surfacing, relocation of county roads, Cascade Reservoir, Boise Project. The work is situated 12 miles northwest of Cascade, Idaho. Principal items are approximately: 58,000 cu. yds. excavation; furnishing and laying 2,000 lin. ft. corrugated-metal pipe; furnishing and erecting 75,000 lb. structural steel; and other work. Time allowed for completion will be 360 days. For particulars, address Bureau of Reclamation, Cascade, Idaho; or Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner.
(298)

General Services Administration, Public Buildings Administration, Washington, D. C. July 29, 1949—On or about Aug. 10, 1949 bidding material for additional story to the United States Post Office Terminal Annex, at Los Angeles, California (steel elevators), will be available for distribution to general contractors by this office. Applications from general contractors interested in bidding on this work, for not to exceed two sets of drawings and specifications, should be filed promptly with this office and the bidding material will be forwarded as soon as available. Bids will be opened on the date named in the Prebid Documents, which will be about six weeks after the bidding material is available for distribution. The present building is reinforced concrete, flat slab construction, with flat roof over present 3rd story; steel windows and steel stud and plaster interior partitions (earthquake construction). Present roof has composition covering. The addition consists of a new 4th story, using the slab in place as the future floor, extension of stair towers, elevator service (elevators under separate contract), extending present stack and new paved landing area on new roof for helicopters. Available for construction—one half to three quarters of a million dollars. Bidding material will be available at Room No. 507, Lemon Building, 1729 New York Ave., N. W., Washington 25, D. C. Phone EXecutive 4900, Extension 2397. W. E. Reynolds, Commissioner of Public Buildings, General Services Administration.
(302)

OFFICIAL PROPOSALS

Bids: September 14, 1949 (305)

High Service Suction, Low Service Discharge, etc.

Office of City Purchasing Agent
Nashville, Tennessee

Sealed bids will be received by the Purchasing Agent of the City of Nashville, Tennessee, at his office in the City Hall, until 10:00 A.M., Central Standard Time, on Wednesday, September 14, 1949 for a High Service Suction, Low Service Discharge, and Appurtenances, at the Water Filtration Plant and Pumping Station, according to plans and specifications which are on file in the office of Robert L. Lawrence, Jr., Director of the Nashville Waterworks Department, Room 201 City Hall, Nashville, Tennessee, and also the office of The Chester Engineers, 210 East Park Way, Pittsburgh 12, Pennsylvania. Immediately after the time for the receipt of bids they will be publicly opened and read aloud in the office of the Purchasing Agent.

The successful bidder will be required to furnish a satisfactory performance bond.

All bids shall be made upon the blank forms of the contract documents. Copies of all contract documents, including Proposal Form, Contract, Plans and Specifications and Instructions to Bidders may be obtained at the office of The Chester Engineers by depositing Twenty-five Dollars ($25.00) for each set of documents so obtained. The entire deposit will be refunded to each actual bidder and Fifteen Dollars ($15.00) will be returned to all others who return plans and specifications in good condition within ten (10) days after opening of bids.

The right is reserved by the City of Nashville, through its Mayor, to reject any and all bids, to waive any informalities in the bids received, and to accept any bid which, in its opinion, may be for the best interest of the City.

A Certified check or bank draft, payable to the City of Nashville, or a satisfactory bid bond executed by the bidder and a surety company authorized to transact business in the State of Tennessee, in an amount equal to Five Percent (5%) of the bid, shall be submitted with each bid.

No bid may be withdrawn after the scheduled time for the receipt of bids.

CITY OF NASHVILLE, TENNESSEE
by E. B. Smith,
Purchasing Agent.

Bids: August 23, 1949 (303)

Sewerage System, Sewage Treatment Plant, Etc.

Sealed proposals will be received by the South Connellsville Sewerage Authority, Fayette County, Pennsylvania, until *8:00 o'clock P.M. (Eastern Day Light Saving Time) on August 23, 1949*, at which time and place the bids will be publicly opened and read aloud, for the Construction of Sanitary Sewerage System, Sewage Treatment Plant and Miscellaneous Appurtenances. Copies of the Plans, Specifications and other Contract Documents can be obtained from Richard J. Harman, Consulting Engineer, 222 North Third Street, Harrisburg, Pennsylvania, upon a deposit of $30.00 for each set of documents. If the documents are returned in good condition within five (5) days after the opening of the bids, $15.00 of the deposit for one set will be refunded. If the documents are not returned within the time stated, the entire amount of the deposit will be forfeited. A certified check equal to five percent (5%) of the amount of the bid must be submitted with the proposal as bid security. A bid bond may be submitted for a certified check.

No bid may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

The South Connellsville Sewerage Authority reserves the right to waive any informalities in or reject any or all bids.

J. T. Steele, Secretary.
South Connellsville Sewerage Authority.
Box #3,
South Connellsville, Pennsylvania.

Bids: August 25, 1949 (306)

Channelized Intersection

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

ROUTE 25 (1927) SECTION 37

Channelized Intersection at Communipaw Avenue and Route 1, Jersey City, Hudson County. Length 0.3 mile.
Estimated:

9,900 c. y. Road Excavation, Earth
2,100 s. y. 4" Macadam Base Course
2,300 s. y. 8" Concrete Base Course
7,500 s. y. 4" Mod. Pen. Mac., Intermediate Course
3,040 tons Pavement Type MA-BC
Lump Sums Traffic Signal Dispatcher Systems

Bids on the above projects will be received at the office of the State Highway Department, Room 102, State House Annex, Trenton, N. J., Thursday, August 25, 1949, at ten o'clock (10:00 A.M.—EASTERN STANDARD TIME), eleven o'clock (11:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, New Jersey, and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 102, State House Annex, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed. Spencer Miller, Jr.
State Highway Commissioner.

Bids: August 15, 1949 (300)

Curb Cock Boxes & Extension Curb Cock Boxes

WASHINGTON SUBURBAN SANITARY COMMISSION

CURB COCK BOXES &
2'3" to 3'6" EXTENSION CURB COCK BOXES

Sealed proposals for one thousand five hundred (1,500) Curb Cock Boxes and fifty (50) 2'3" to 3'6" Extension Curb Cock Boxes will be received in Room 3 of the Washington Suburban Sanitary Commission, Hamilton Street, Hyattsville, Maryland until 10:30 A.M. Eastern Daylight Saving Time on August 15, 1949, at which time and place they will be publicly opened and read.

Any other information desired may be obtained from W. R. Douglas, Purchasing Agent of the Commission, Hyattsville, Maryland.

Dwight B. Galt, Chairman
Leland G. Worthington
Warren Browning
Commissioners

Bids: September 13, 1949 (307)

Extension of Tender Date

METROPOLITAN WATER SEWERAGE AND DRAINAGE BOARD
SYDNEY, AUSTRALIA
EXTENSION OF TENDER DATE

Tenders in envelopes endorsed with the Plant Tender Number and addressed to The Secretary, 341 Pitt Street, Sydney, New South Wales, Australia, will be received until 2 p.m. on September 13th, 1949 for the undermentioned:

Plant Tender No. 330

Supply and delivery of up to eight (8) Concrete Buckets of Rated Capacity at least 5 cubic yards. No Deposit. Security 1% of tender price from the successful tender only. Specification and tender forms may be obtained from the Board by air mail application.

G. C. HICKS,
Secretary.

An advance copy of the Specification may be seen at the Office of the Australian Government Trade Commissioner, Room 426, 630 Fifth Avenue, New York 20, N. Y.

Bids: September 9, 1949 (304)

Water Treatment Plant and Sewage Project

THE CITY OF OCALA
FLORIDA

Will receive bids until 2:00 P.M. September 9, 1949, for the construction of:

WATER TREATMENT PLANT
AND
SEWERAGE PROJECT, INCLUDING COMPLETE TREATMENT PLANT
AND TWO LIFT STATIONS

THIS WORK IS SCHEDULED TO TAKE ADVANTAGE OF FLORIDA'S FINEST CONSTRUCTION WEATHER.

Legal advertisements for bids, plans and contract documents may be obtained from Russell and Axon, Consulting Engineers, Municipal Airport, P. O. Box 1431, Daytona Beach, Florida, upon deposit of $35.00 for each set, $10.00 whereof will be refunded upon returning the set in good condition within 10 days after award of the contract.

J. M. Baldwin
City Manager

(Continued on page 73)

OFFICIAL PROPOSALS
(Continued from page 72)

Bids: August 23, 1949 (290)

Filtration Plant & Reservoirs

WASHINGTON SUBURBAN SANITARY COMMISSION
CONTRACT NO. 663-W
ADDITIONAL FILTRATION PLANT UNIT AND TWO FILTERED WATER RESERVOIRS
WILLIS SCHOOL FILTRATION PLANT

Sealed proposals for furnishing and erecting, on foundations prepared by others, an additional filtration plant unit of 11.12 Mgd rating and two filtered water reservoirs, of 2.15 Mg and 2.84 Mg capacities, respectively, will be received at the office of the Washington Suburban Sanitary Commission, Hamilton Street, Hyattsville, Maryland, until Tuesday, August 23, 1949 at 1:00 P. M., Eastern Daylight Saving Time, at which place and time they will be publicly opened and read.

Plans and specifications may be obtained from the office of the Chief Engineer of the Commission, Hyattsville, Maryland, upon deposit of $10.00, which deposit will be returned to bidders or to those returning plans and specifications in good condition.

Dwight B. Galt
Warren Browning
Leland G. Worthington
Commissioners

Bids August 31, 1949 (288)

16-Inch Cast Iron Submarine Pipe

Long Island Water Corporation
733 Sunrise Highway
Lynbrook, L. I., New York

Bids will be received up to 2:00 P. M. August 31, 1949 for laying approximately 1000 linear feet of 16-inch flexible-jointed cast iron pipe across Reynold's Channel between Beach 2nd Street, Lawrence, and 7th Street, Atlantic Beach. Pipe is to have 1 foot of sand and 3 feet of stone cover. Type of joint is "Usiflex", thickness ¾ inch, weight per 12-foot length approximately 2200 lbs. Owner will furnish pipe.

Plans and Specifications may be obtained at a charge of $10 at the office of the Long Island Water Corporation and may be seen at the office of Thos. H. Wiggin, Consulting Engineer, 90 Broad Street, New York 4, New York.

Bids: September 9, 1949 (293)

Construction of Open Cut Portion of Relief Sewer

NOTICE TO CONTRACTORS—City of Albany, N. Y., Board of Contract and Supply. Sealed bids or proposals for "Constructing the Open Cut Portion of the Beaver Creek Trunk Relief Sewer" will be received at the office of the Board of Contract and Supply, City Hall, Albany, New York, until three o'clock p. m. (Daylight Saving Time) on Friday, September 9, 1949, and at that time and place will be publicly opened and read.

The contract involves the construction of about 1,600 feet of reinforced concrete sewer about 8 feet high and from 10 to 45 feet wide from the vicinity of South Pearl street to the Hudson River along Rensselaer street, in the City of Albany, New York.

Drawings, specifications, information for bidders, proposal contract and bond forms are on file and may be seen at the office of the Board of Contract and Supply, City Hall, Albany, New York. Copies may be obtained at that office upon deposit of Twenty-five Dollars. The drawings and specifications may be seen but not obtained at the office of Parsons, Brinckerhoff, Hall and MacDonald, Engineers, 51 Broadway, New York 6, N. Y.

All proposals must be submitted upon the blank form and in accordance with the instructions furnished by the City of Albany.

Each proposal must be accompanied by a certified or cashier's check on a National or State bank in the sum of Twenty thousand Dollars ($20,000.00).

A bond of indemnity of a duly authorized surety company in the sum of the full amount of the contract will be required for the faithful performance of the contract.

The time of completion is twelve months from the date of the signing of the contract.

The Board of Contract and Supply reserves the right to reject any or all bids, and to waive any technical defects, as the interest of the City may require.

CITY OF ALBANY, NEW YORK,
Board of Contract and Supply.
By: Peter J. Manwiller, Secretary.

OFFICIAL PROPOSALS

Bids: September 1, 1949 (292)

Construction of Perimeter & Filtration Plant Fences

July 29, 1949

Subject: NOTICE OF ADVERTISING FOR BIDS FOR CONSTRUCTION OF PERIMETER AND FILTRATION PLANT FENCES, OAK RIDGE, ANDERSON COUNTY, TENNESSEE.

To: Prospective Bidders and Others concerned:

1. On August 2, 1949, Roane-Anderson Company, an Agent for and on behalf of the United States of America under Contract No. W-7401-eng-115, will issue invitations for bids for Construction of Perimeter and Filtration Plant Fences.

2. The work consists of furnishing all labor, tools, equipment and materials and performing all work (except work specified to be performed by others) required to complete the construction of Perimeter and Filtration Plant Fences and all operations necessary to erect approximately forty nine thousand two hundred (49,200) lineal feet of chain link fence and eight (8) 12'-0" single leaf swing type, hand operated gates. Work shall include all necessary excavation, clearing and grading and the removal of approximately two thousand eight hundred (2,800) lineal feet of woven and barbed wire fences. Also furnish and install one entrance assembly at Blair Gate, including two (2) 10-ft. swing type gates, at railroad entrances, two (2) 14-ft. and one (1) 12-ft. swing type gates at highway entrance. All in strict accordance with the specifications and drawings together with such incidental work at the site within the intent and meaning of the specifications.

3. All bids will be considered not only on the basis of the lowest bid but on the applicable experience, financial assets, integrity of the bidder and his ability to obtain equipment and employees. The Roane-Anderson Company, as Agent aforesaid, reserves the right to reject any and all bids and to waive any informality in bids received, and to accept or reject any or all of any bid, unless such bid is qualified by specific limitation. However, all accepted items will be awarded as a whole to one bidder.

4. Bids will be received until 2:00 p.m. (EST) September 1, 1949 and then publicly opened. Seventy-five (75) calendar days will be allowed for the completion of the work.

5. Request for plans and specifications should be made to Roane-Anderson Company, Attention: F. C. Feld, Assistant Chief Purchasing Agent, Purchasing Department, P. O. Box 456, Oak Ridge, Tennessee, and should be accompanied by a Postal Money Order or a certified check payable to the order of Roane-Anderson Company in the sum of $5.00 which deposit will be refunded after the plans and specifications have been returned in good condition.

6. For additional information address the above mentioned, or telephone F. C. Feld, through Knoxville 4-3387, extension 24 or 25, or Oak Ridge 5-4361, extension 24 or 25.

ROANE-ANDERSON COMPANY, AS AGENT FOR AND ON BEHALF OF THE UNITED STATES OF AMERICA

Bids: August 24, 1949 (301)

Construction of Grading, Drainage Etc.

PENNSYLVANIA TURNPIKE COMMISSION
Harrisburg, Pennsylvania
NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 311 North Fourth Street, Harrisburgh, Pennsylvania, until 10:00 A.M. (Eastern Daylight Saving Time), the 24th day of August, 1949, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room No. 1, North Office Building, State Capitol, Harrisburg, Pennsylvania, and immediately publicly opened and read aloud, for the following contract:

For construction of grading, drainage, structures, and paving of Turnpike Section 22B, part of the Philadelphia Extension in Steelton Borough, Highspire Borough, and Lower Swatara Township, Dauphin County, Commonwealth of Pennsylvania. This section being situated as follows:

Beginning at a point about 897 feet West of Legislative Route 129 (U.S. 230) in the Boroughs of Steelton and Highspire at Turnpike Station 51+82 (Dauphin County) thence in an Easterly direction 17,101 feet to a point about 1,162 feet West of Legislative Route 618 (TR 441), Lower Swatara Township, at Turnpike Station 222+83 (Dauphin County) a distance of approximately 3.24 miles.

The approximate quantities of the principal items are as follows:

Class I Excavation	480,000 cubic yards
Class II Excavation	20,400 cubic yards
Reinforced Concrete Pavement	107,700 square yards
Class A Concrete	4,880 cubic yards
Class B Concrete	6,200 cubic yards
Plain Steel Bars	1,108,000 pounds
Fabricated Structural Steel	1,054,000 pounds

Copies of plans, specifications and other contract documents, including cross-sections, are on file and open to public inspection at the offices of the Pennsylvania Turnpike Commission located at Harrisburg, Pennsylvania, on 10 August 1949. Copies of cross-sections may be purchased from the Pennsylvania Turnpike Commission for the sum of Fifty Dollars ($50.00) per set.

Specifications and contract documents, exclusive of cross-sections, may be obtained from the Commission upon deposit of Ten Dollars ($10.00) for each set, such deposits to be refunded in full to any actual bidder upon return of such documents in good condition within five (5) days after the date of the opening of the bids. Refund will be made for all plans, contract documents and cross-sections returned, if the project is withdrawn from letting by the Pennsylvania Turnpike Commission. Remittances are payable to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications and cross-sections.

The character and amount of bid security to be furnished by bidder is stated in the Instructions to Bidders.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

PENNSYLVANIA TURNPIKE COMMISSION
James F. Torrance
Secretary and Treasurer
Harrisburg, Pennsylvania
August 2, 1949

SUB BIDS WANTED

For clearing and snagging approximately 6.5 miles, or any part thereof of Steele Bayou, near Vicksburg, Mississippi. Interested parties contact Inland Construction Co., Inc. P. O. Box 507, Rosedale, Mississippi, Telephone 13. (278)

U. S. Government

Bureau of Public Roads, General Services Administration, August 1, 1949. SEALED BIDS will be received at the office of the Forest Supervisor, United States Forest Service, Room 218, Post Office Bldg., Liberty St. and 2nd Ave., Warren, Pennsylvania, until 10:00 a.m., E.S.T., September 2, 1949, for the construction of Pennsylvania Forest Highway Project No. 13-B, Elk and Forest Counties, Pennsylvania. Length—3.414 miles. The approximate quantities of the more important items are—19,950 cu. yd. Excavation and 34,000 sq. yd. Stone or Slag Base Course. Minimum wage rates have been fixed as required by law. For plans and specifications a deposit of $10.00 cash or certified check made payable to the Treasurer of the United States will be required to insure their return within 15 days after the opening of bids. Plans, specifications and proposal forms may be obtained from the Bureau of Public Roads, 1440 Columbia Pike, Arlington, Virginia. Plans and specifications may be examined at the Forest Supervisor's office in Warren. H. J. Spelman, Division Engineer. (297)

Bureau of Public Roads, General Services Administration, July 28, 1949. SEALED BIDS will be received at the office of the Division Engineer, Bureau of Public Roads, 1440 Columbia Pike, Arlington, Virginia, until 10:00 a.m., D.S.T., August 26, 1949, for the construction of Project Va. DA-WR 8, Bridge 21 Extension, Pentagon Road Network, Arlington County, Virginia, including 970 cu. yd. cement concrete, 160,000 lb. reinforcing steel, and other work. Minimum wage rates have been fixed as required by law. For plans and specifications, a deposit of $10.00 cash or certified check made payable to the Treasurer of the United States will be required to insure their return within 15 days after the opening of bids. Plans, specifications and proposal forms may be obtained at the address given above. H. J. Spelman, Division Engineer. (296)

(Continued on page 74)

U. S. Government
(Continued from page 73)

CORPS OF ENGINEERS, Baltimore District, Baltimore, Md.—Sealed bids will be received here until 11 a.m. E.D.S.T., 20 September 1949, and then opened for Construction of Veterans Administration Hospital, Quarters, Service Buildings, and Utilities, Baltimore, Maryland. Plans may be obtained by deposit of $50 per set in form of cash, CERTIFIED check or postal money order payable to The Treasurer of the United States and mailed to the District Engineer, Corps of Engineers, 24th Street and Maryland Avenue, P. O. Box 1715, Baltimore 3, Maryland. (291)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2747) will be received by Bureau of Reclamation, Coachella, California, September 1, 1949, and then publicly opened for furnishing labor and materials and performing all work for the construction of earthwork, pipe lines, and structures, lateral 123.45, sublateral and wasteway, unit 7, and reconstruction of main canal, station 6516 to station 6517, Coachella Valley Distribution System, Boulder Canyon Project, Arizona-California-Nevada. The work is situated in the vicinity of Thermal, Coachella, and Indio, California. Principal items are approximately: 376,000 cu. yds., excavation; 362,000 cu. yds., backfill; 72 miles of pipe line laterals; and other work. Time allowed for completion will be 450 days. For particulars, address Bureau of Reclamation, Coachella, California; or Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner. (294)

OFFICIAL PROPOSALS

Bids: August 24, 1949 (295)

State Road Work

STATE DEPARTMENT OF PUBLIC WORKS
BUREAU OF CONTRACTS & ACCOUNTS
ALBANY, NEW YORK

Sealed proposals will be received by Henry A. Cohen, Director, Bureau of Contracts & Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., until ten-thirty o'Clock a.m., advanced standard time, on Wednesday, August 24, 1949, for projects in the following counties:

County	Deposit plans	Bid deposit	Type	Miles	Engineer's estimate
Fulton	$5	$4,000	Asph. Conc. Opt.	1.99	$71,000
Cayuga	5	3,000	Bit. Mat. Appl. & Stone Cover	1.27	59,000
*Seneca & Cayuga	10	40,000	9" Cem. Conc. Pavt. 24' 28' wide =1.04 Mi. Asph. Conc. Opt. = 0.43 Mi. 250' Sp. Truss with 4-App. Alpha I-Beams 2 @ 45' & 2 @ 75' Alpha =$126.00	1.47	704,000
*Wayne	10	55,000	9" Cem. Conc. Pavt. 24' 30' wide. Alpha I-Beam 57' Sp. RR Sp. Alpha I-Beam 8 Sp. 370.2' Total RR. Sp. Alpha = $298.90	0.67	958,000
Ontario	10	22,000	Asp. Conc. Tr. 2-A = 0.78 Mi. 8" Cem. Conc. Pavt. Widen = 0.06 Mi.	0.84	379,000
Ontario	10	55,000	Asp. Conc. Tp. 2-A	1.79	933,000
*Ontario	10	48,000	9" Cem. Conc. Pavt. 24' wide Alpha Plate Girder 2 Sp. 102' 7 1/2" & 74' 7 1/2" Alpha I-Beam 2 Sp. 79' Each Alpha = $301.00	2.54	822,000
*Erie	10	65,000	Grading & Struct. = 0.15 Mi. 9" Cem. Conc. Pavt. 40' 54' wide = 0.41 Mi. 4 Sp. Alpha I-Beam 2 @ 60' & 2 @ 40' 4 Sp. Alpha I-Beam 2 @ 44' & 2 @ 66' 4 Sp. Alpha I-Beam 2 @ 49' 4" & 2 @ 74' Alpha = $1498.		
Dutchess	5	4,000	8" Cem. Conc. Pavt. 22' Wide	0.34	72,000
Orange	5	10,000	Dble. Surf. Treat. Gravel Found Crse.	3.08	179,000
Bronx	20	130,000	Grad. & Structures 2 Sp. Rig. Frame 63' 5" & 62' 11 1/2". Reinf. Conc. arch 63' 10 1/4". Reinf. Conc. Ellip. Arch 94'	0.51	2,420,000
Suffolk	20	50,000	9" Cem. Conc. Pavt. 46' wide = 0.73 Mi. 9" Cem. Conc. Pavt. Var. Widen = 10.18 Mi. Misc. Work =0.01 Mi.	11.02	933,000
Suffolk	20	30,000	8" Cem. Conc. Pavt. 2 @ 25' & Var. Wide = 0.87 Mi. Asp. Conc. Opt. = 0.41 Mi. Misc. Work = 0.03 Mi. Rig. Frame 44' 8 1/4" Rig. Frame 2 Sp. @ 36' 9" Ea.	1.31	562,000

* These projects involve the use of Alpha Composite Construction which is patented and the royalty is as follows:

Seneca & Cayuga	$126.00
Wayne	298.90
Ontario	301.00
Erie	1498.00

Maps, plans, specifications, and estimates may be obtained at the office of the Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers in whose district the roads are located. The name and address of the District Engineers will be furnished on request.

Plans may be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract containing 1 to 15 sheets is $5.00; 16 to 30 sheets, $10.00; over 30 sheets, $20.00. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by cash, draft or certified check payable to the order of "State of New York, Commissioner of Taxation & Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders."

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

R. D. TALLAMY
SUPT. OF PUBLIC WORKS

Bids: September 6, 1949 (282)

Grading of Highway Approaches

THE DELAWARE MEMORIAL BRIDGE
NOTICE TO BIDDERS

Sealed proposals for the grading of the highway approaches to "The Delaware Memorial Bridge" over the Delaware River near Wilmington, Delaware, will be received by the Delaware State Highway Department at the office of the Director, Delaware Crossing Division, Continental American Building, Wilmington, Delaware, until 11 o'clock Eastern Standard Time (12 o'clock Eastern Daylight Saving Time), September 6, 1949. Immediately thereafter proposals will be publicly opened and read in the Council Chamber, Wilmington City Hall. The work will be let under two separate contracts—Contract No. 12 for the East Approach Grading, and Contract No. 14 for the West Approach Grading.

The work involves the following approximate principal quantities:

Contract No. 12. East Approach Grading
Excavation ..... 10,000 cu. yds.
Borrow ..... 40,000 cu. yds.
Concrete Pipe ..... 250 lin. ft.

Contract No. 14. West Approach Grading
Excavation ..... 200,000 cu. yds.
Borrow ..... 140,000 cu. yds.
Concrete Pipe ..... 510 lin. ft.

Performance of the contracts shall begin promptly after execution of the contracts and contracts shall be completed on or before the dates scheduled as follows:

Contract No. 12 East Approach Grading
July 1, 1950

Contract No. 14 West Approach Grading
July 1, 1950

Monthly payments will be made for ninety (90) per cent of the construction completed each month.

Bidders must submit proposals upon forms furnished by the Department.

Each proposal must be accompanied by an acceptable surety bond or certified check for a sum equal to at least ten (10) per cent of the total amount of the proposal.

The Contracts will be awarded or proposals rejected within twenty (20) days from the date of opening proposals. The right is reserved to reject any or all bids.

The Plans and Specifications and other contract documents may be examined at the office of the Director, Delaware Crossing Division, and at the office of the Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, N. Y. One complete set of the Plans and two copies of the Specifications for these contracts may be obtained from the Engineers after August 12, 1949 upon payment of $25.00. Any prospective bidder who has made such a deposit may secure extra blueprint copies of the Plans upon payment of 50 cents per drawing, and extra copies of the Specifications upon payment of $2.00 per copy.

All Plans and Specifications shall be returned to the Engineers, and on such return $10.00 of the above payment will be refunded. No refund will be made out of payments for extra prints of the Plans. Full refund of deposit will be made out of payments for extra copies of the Specifications. All such refunds will be made only upon return of the documents within 10 days after the opening of proposals.

State Highway Department
By: J. Gordon Smith, Chairman
W. W. Mach, Director
Delaware Crossing Division
Wilmington, Delaware
July 26, 1949.

Bids: September 6, 1949 (281)

Construction of Electric Elevators

THE DELAWARE MEMORIAL BRIDGE
NOTICE TO BIDDERS

Sealed proposals for the construction of electric elevators in the suspension bridge towers of "The Delaware Memorial Bridge" over the Delaware River near Wilmington, Delaware, will be received by the Delaware State Highway Department at the office of the Director, Delaware Crossing Division, Continental American Building, Wilmington, Delaware, until 11 o'clock Eastern Standard Time (12 o'clock Eastern Daylight Savings Time), September 6, 1949. Immediately thereafter proposals will be publicly opened and read in the Council Chamber, Wilmington City Hall. The work will include two elevators, one in each tower, and will be let under Contract No. 11, Tower Elevators.

Performance of the contract shall begin promptly after execution of the contract and the contract shall be completed on or before September 1, 1950.

Monthly payments will be made for ninety (90) per cent of the construction completed each month.

Bidders must submit proposals upon forms furnished by the Department.

Each proposal must be accompanied by an acceptable surety bond or certified check for a sum equal to at least ten (10) per cent of the total amount of the proposal.

The Contract will be awarded or proposals rejected within twenty (20) days from the date of opening proposals. The right is reserved to reject any or all bids.

The Plans and Specifications and other contract documents may be examined at the office of the Director, Delaware Crossing Division, and at the office of the Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, N. Y. One complete set of the Plans and two copies of the specifications for this contract may be obtained from the Engineers after August 12, 1949 upon payment of $15.00. Any prospective bidder who has made such a deposit may secure extra blueprint copies of the Plans upon payment of 50 cents per drawing, and extra copies of the Specifications upon payment of $2.00 per copy.

All Plans and Specifications shall be returned to the Engineers, and on such return $10.00 of the above payment will be refunded. No refund will be made out of payments for extra prints of the Plans. Full refund of deposit will be made out of payments for extra copies of the Specifications. All such refunds will be made only upon return of the documents within 10 days after the opening of proposals.

State Highway Department
By: J. Gordon Smith, Chairman
W. W. Mack Director
Delaware Crossing Division
Wilmington, Delaware
July 26, 1949.

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P-9563, Engineering News-Record
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ENGINEER EXPERIENCED industrial and power plant construction about four years in field plus two or three in design and drafting. Opportunity for one who knows construction responsibilities both office and job and likes them. Degree not essential. Northern Ohio City location. P-9471, Engineering News-Record.

WANTED THOROUGHLY experienced estimator for well established general building contractor's office. Location—Central Indiana. State education, experience, age, salary desired and when available. P-9425, Engineering News-Record.

ESTIMATOR: EXPERIENCED quantity survey man and project manager. Virginia-Carolina area. P-9549, Engineering News-Record.

SUPERINTENDENT: EXPERIENCED in private and public buildings. Virginia-Carolina area. Give full experience, references and salary expected. P-9550, Engineering News-Record.

WANTED EXPERIENCED structural steel draftsman, location Oklahoma. Reply P-9547, Engineering News-Record.

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CONCRETE FOREMAN, 28 years experience in concrete field. Aggregate, batch and crushing plants. 200 to 900 yds. placing and handling. Foreign position desired. PW-9474, Engineering News-Record.

CIVIL ENGR. Grad., Veteran, 2 yrs. exp. desires connection with constructor as Asst. Foreman or similar field job. Location immaterial. PW-9554, Engineering News-Record.

CONSTRUCTION AND Maintenance Engineer, C.E. graduate. Broad experience in design, construction, maintenance, contracting, purchasing, etc.; all types of commercial and industrial buildings. Former contractor, good business background. Speaks Spanish. Wishes position here or Latin America. PW-9589, Engineering News-Record.

DRAFTSMAN GENERAL, good structural. Also machinist, millwright and licensed embalmer. Want foreign work. PW-9579, Engineering News-Record.

STRUCTURAL DESIGN Engineer, graduate and registered—age 39 married. 12 years responsible engineering experience, covering structural design and preparation of plans for nationally known architects, engineers and builders, for commercial industrial, and institutional structures. Can furnish A-1 references. PW-9585, Engineering News-Record.

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PW-9483, Engineering News-Record
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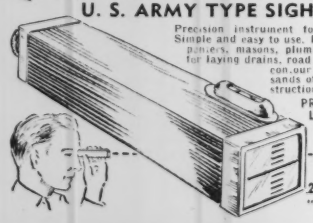

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International TD 14 hydr. Bulldozers, excellent
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Byers Truck Crane (Model 604-BB) ¾ yard
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Two Years Old—Fine Condition

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¾ yd. Buckeye Clipper Shovel 2 years old. In A-1 condition. Two attachments. Dipper stick and back hoe.

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P&H 955 LC—3 yd. drag or crane, serial 6986, 80' boom, 20' jib, back stays, etc., full crane and drag equipment; Cat D17000 motor; 4 cyl. light plant; machine 100% rebuilt with all new gears, shafts and bushings; perfect condition. Priced low for prompt sale at **$27,500.00.**

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1—Rebuilt 1947 Byers 83, ¾ cu. yd., clam, drag, long cats, Buda gas, 45 ft. boom	$8,400.00
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1—Blaw-Knox 2 cu. yd. clam bucket, used 4 months	800.00
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1—Almost new Towermobile, used 1 month, complete with 1948 1-½ ton truck	4,800.00
1—Buda earth drill, Model HBD-T, used 1 month	2,600.00
1—Rebuilt UD-18 International-diesel 100 h.p. power unit complete with radiator, housing, clutch	1,600.00
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Conveyor 24" x 30'—portable.
2 yd. Hayward orange-peel bucket.
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2 Model EKH Waukesha-Hesselman Engines.
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Above engines are used but in re-buildable condition. Can be used as spare engines or for heavy parts for your present engines. Priced right for quick sale.

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MODEL 160 SINGLE PUMPCRETE

With Remixer, 350 ft. 6" Pipe, Bends, Accessories.

All A-1 Condition—Attractive Price

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2—6 yd. BBM (new) Wooldridge	**Scrapers** ..... each	$4385.
1—10 Ton Tilt Top (new)	**Trailer**...	995.
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1—**Backhoe** for L-75.....		1500.
2—Model C-104 LaPlant Choate 30-yd.	**Scrapers** ..... each	2500.
1—Model 201 Galion	**Grader** Diesel, with cab & lights.....	4500.
1—Allis Chalmers HD14	**Angledozer**	4500.
1—Diamond	**Conveyor** 24" belt, 30' boom, gas engine, on rubber tires	2250.

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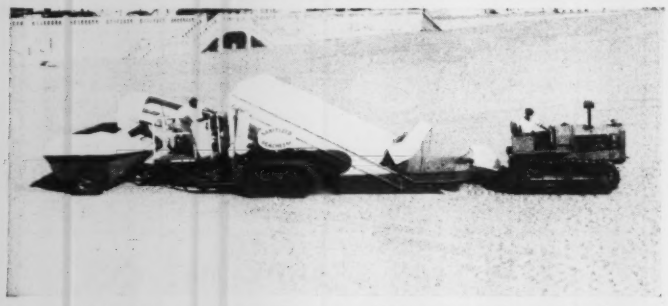
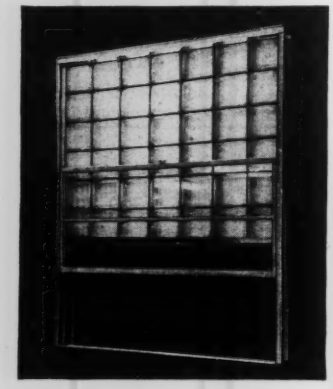


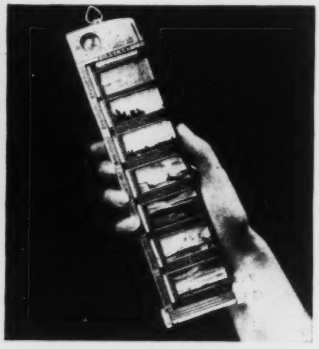
Mobile Cleaning Unit Removes Debris from Beach Sand

Mobile beach-cleaning unit removes trash and debris from beach sands while traveling at speeds up to 1¼ mph. The Beach Sanitizer cuts a 6½-foot swath to a maximum depth of 9 inches. Operating at this depth, it will process from 2,000 to 3,500 square yards of beach per hour. Dry sand is processed through a mesh as fine as ⅜ inch; wet sand, through a ⅝-inch mesh. Heavy-duty rake teeth project below and in front of the digging operation to protect the buckets. Steel walls project below the surface, holding the cut open while the sand is being processed, to prevent overlap. Buckets are agitated in an inverted position after each cut, preventing nails, rags, and other debris from loading the screens. The conveyor belt, carrying trash to the 5-cubic-yard trailer, passes before the operator to permit recovery of valuable articles. One-man-operated, the unit weighs 10 tons and is pulled by a Caterpillar D-4 tractor. Power for the Sanitizer is supplied by a Model XAIIU Waukesha engine. Hydraulic system controls depth of cut, engine, and picking-belt clutches.—Stephens-Adamson Mfg. Co., Aurora, Ill.



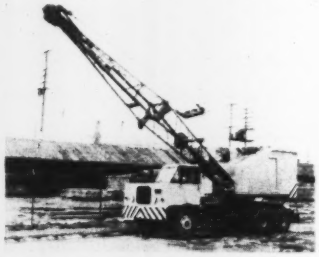
Sliding Vision-Strip Sash

A glass-block window with sliding vision-strip sash can now be installed in conventional window openings in any type of building. It is adaptable to any opening, large or small, and is strong and rigid enough to provide its own lintel. Frames are shipped completely assembled ready for glazing and installation of the glass block. The new window gives vision and ventilation with single pane or double glazing. Glass block windows may be used singly or in multiples. When installed in groups, the jambs act as mullions eliminating the need for additional intermediate structural members.—American Structural Products Co., Subsidiary of Owens-Illinois Glass Co., Ohio Bldg., Toledo 1, Ohio.



Pocket Weather Forecaster

Accurate local weather information, 12 to 24 hours in advance, is now available to construction firms merely by twisting an instrument dial. Operation of the device requires no special skill—direction of the wind is noted and local clouds matched with one of seven pictures of cloud formations on the face of the instrument. Turning a dial to align a red arrow with the wind direction, then causes the correct weather prediction to appear in a window at the top of the instrument. Developed by Dr. Irving P. Krick, president of the American Institute of Aerological Research, the weather guide is based on the fact that weather is caused by certain moisture and temperature conditions in the atmosphere; not by air-pressure changes alone.—American Optical Co., Southbridge, Mass.



Truck Crane and Carrier

A new truck crane and carrier combination has a capacity of 20 tons and a boom length which is variable between 30 and 100 ft. Main operating machinery of the crane is mounted on cast-steel side frames. The Feather-Touch clutch control uses power of the engine to throw heavy drum clutches, uniform-pressure swing clutches and a high-speed power-controlled boom hoist, independent of all other operations. The carrier has a box-type truck frame, reinforced the full length of the carrier. Outriggers extend the full width of the carrier and have unusual bearing support when extended. The forward outrigger is positioned close to the rear wheels to relieve the carrier of a greater amount of stress. The rear outrigger trunk is demountable and makes possible changing from crane work to shovel, dragline or pullshovel without the necessity of repositioning the lower base for the crane.—Northwest Engineering Co., 135 So. LaSalle St., Chicago, Ill.

High-Pressure Reducing Valve

A reducing valve for handling working pressures of as high as 6000 psi. without shock. The Type F valve is recommended for reducing the pressure of water, oil and compressed air. In single-stage operations it can be used to 250 psi. or within 20 percent of the initial pressure. For lower reduced pressures, the reduction should be made in two stages, the first stage through the Type F and the second stage through a valve for handling working pressures of up to 300 psi.

(*Continued on page 82*)

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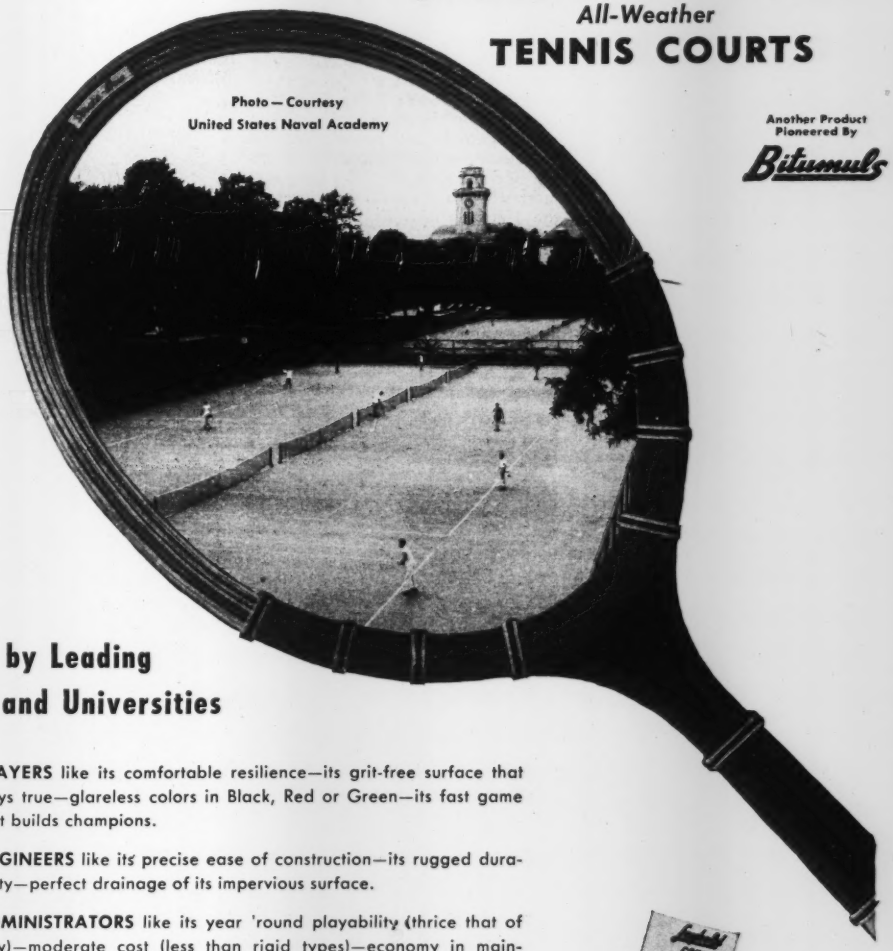

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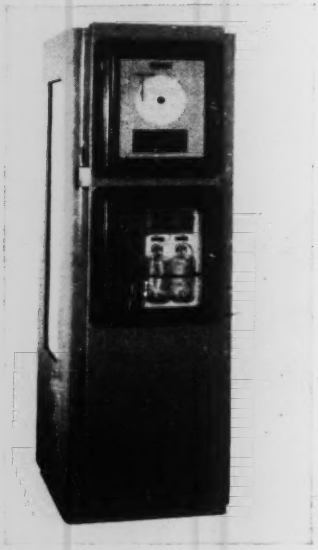
The pressure on the seat is balanced by a piston, so that variations in initial pressure have little effect on the reduced pressure.—The Atlas Valve Co., 282 South St., Newark 2, N. J.



Residual Chlorine Recorder

Recorder provides a continuous permanent record of actual chlorine residuals—either free available or total. It consists of a cell and recording mechanism housed for use in connection with any Wallace & Tiernan chlorinator installation. Optional accessories include a remote residual indicator and a remote alarm system. Advantages include better chlorination control permanent record, check on operating irregularities, determination of chlorine demand, provides a check on usage to avoid wastage, and determines residuals in the distributing system.—Wallace & Tiernan Co., Inc., Box 178, Newark 1, N. J.

All-Purpose Hose

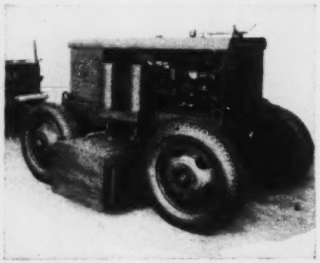
New all-purpose hose is capable of carrying air, water, oil, gasoline and acids of low concentration and temperature. The Goodyear hose is made with vertically braided rayon carcass and oil-resisting synthetic tube, friction and cover. It is manufactured in sizes from $\frac{3}{8}$ in. to $1\frac{1}{4}$ in. inside diameter.—Goodyear Tire & Rubber Co., Akron, Ohio.

Welder Works on 110 Volts

The new Lincoln electric arc welder can operate from any source of 110 volt current. It is recommended for fabricating and cutting light-gage metals and when equipped with a small rectifier, for battery charging. The Linewelder 60 weighs approximately 50 lb. and is easily carried by its handle. It has a maximum output of 60 amps. Standard equipment includes a 6-ft. insulated cord, standard plug for conventional light socket, protecting head shield and lens, electrode holder and 9-ft. cable, ground cable and a supply of electrodes and brazing rods. —The Lincoln Electric Co., 12818 Coit Road, Cleveland, Ohio.

Split-Shaft Power Take-Offs

Production has resumed on the Hercules split-shaft power take-offs. The company again offers direct, offset, side and dual drives for long and short wheelbase trucks. Features of the Hercules take-offs include transmission of full horsepower and torque of the truck motor for operation of air compressors, electric welders, winches, pumps, rock crushers, cement mixers, hammermills, drills, and other portable equipment. — Hercules Steel Products Corp., Galion, Ohio.

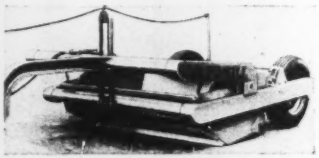


High-Speed Magnetic Sweeper

High-speed trailer-mounted magnetic sweeper is powered by a gasoline-engine-driven generator set. These units are designed specifically for magnetic sweeping of airport landing strips, roads, and other surfaces where waste metal might cause serious accidents. The magnet covers an area of 26 x 96 inches and is suspended by spring hangers to provide support when trailer is suddenly accelerated or decelerated.—International Diesel Electric Co., Inc., 13-02 44th Ave., Long Island City 1, N.Y.

Angular-Thrust Swivels

Twisting and kinking of wire lines in strung hoisting blocks is prevented by the use of the Miller angular-thrust ball-bearing swivels. Combined with a hook, they make it possible to turn loads independently of the block and make placing of the loads simpler, thus providing the hoist operator with greater control and greater safety in handling the load. The freely turning angular-thrust swivels can also be used on the dead end of strung blocks. Used in this manner, they make stringing or restringing much easier by automatically taking all the kink and twist out of the line. Complete assemblies are available, or the Miller swivel can be inserted in blocks now in use. They are available in a wide range of capacities for handling loads of up to 23 tons with a safety factor of more than 5 to 1. They are available in fourteen different styles with eight different capacities for single-strand hoisting.—General Machine & Welding Works, Pomona, Calif.



Light-Duty Earth-Mover

The Gledhill earth mover is designed for use in conjunction with wheel-type or small crawler-type tractors. It has a struck capacity of 27 cubic feet; heaped, 35 cubic feet. Features include wheels located at the rear and inside the frame, all-hydraulic controls, automatic quick-disconnect couplings, and ease of operation. It can be used for digging, hauling, grading, or leveling. The unit is 11 feet 6 inches long, 5 feet 9 inches wide, and it will make a 6-inch cut. Maximum spreading depth is 12 inches.—The Gledhill Road Machinery Co., Galion, Ohio.

Cellar Drainer

A new cellar drainer or sump pump has these features: High capacity of 4,200 gal. at 5 ft. discharge head; new type vulcanized rubber, positive control floats; continuous duty motor at discharge 10 ft. and above; stainless steel shaft; bronze impeller of open construction; designed to be used in 12-in. drain tile.—Fairbanks, Morse & Co., 600 So. Michigan Ave., Chicago 5, Ill.

Lightweight Hoist

Feature of Auto-Bloc lightweight, heavy-duty hoist is simplified hoisting mechanism employing only two gears and making possible substantial weight savings. Gears are a cam-actuated floating inner gear and an outer gear to which the load sheave is rigidly connected. Each pull on the hand chain causes cam shaft to revolve, actuating the floating inner gear. Cover is unbreakable, drop-forged from chrome manganese steel. Available in 16 standard models of $\frac{1}{2}$ to 40 ton capacity.—David Round & Son, Cleveland 5, Ohio.

Grinder and Polisher

A pneumatic rubber drum inflated at low pressures is the basis of the

NU-MATIC grinder, a new low-cost power-wheel unit for grinding, sanding or polishing curved, irregular and contour surfaces. Standard abrasive bands of 5-in. dia. and 3½-in. width in a variety of abrasive grits can be changed from roughing to finishing in a matter of seconds. Changes or replacements are accomplished by releasing the air and then reinflating to work requirements. The rubber drum provides a 100 percent grinding surface of the entire width of the abrasive band. NU-MATIC eliminates grinder marks, covers work better—faster, and adds to the life of the abrasives. — Nu-Matic Grinders, Inc., 10,304 W. McNichols Road, Detroit 21, Mich.

Paint-Line Connection

A quick detachable connection shuts off fluid under pressure when the hose connection is broken and instantly restores the flow when the connection is re-established. Designed for use in the material or fluid line of spray-painting systems, it will not squirt when the connection is made or broken, won't leak, won't stick or jam. The Binks connection has a bayonet-type joint which is attached by a slight turn of the wrist.—Binks Mfg. Co., 3122 Carroll Ave., Chicago 12, Ill.

Heavy-Duty 60-Cfm Compressor

Packaged unit consists of 2-stage V-belt-driven air-cooled Air-Plus compressor and 15-hp electric motor, mounted on an 8.5 cubic foot air receiver with base, and all electrical controls. It delivers 60 cubic feet of 100-pound air per minute at moderate temperature. Maximum working pressure is 125 pounds. Across-the-line starter and dual controls are standard equipment. — Jaeger Machine Co., 550 Spring St., Columbus 16, Ohio.

Safety Tread Ladder Step

Provides level footing for workers on rung ladders and enables them to

(Continued on next page)

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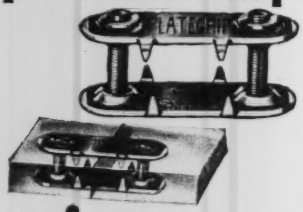

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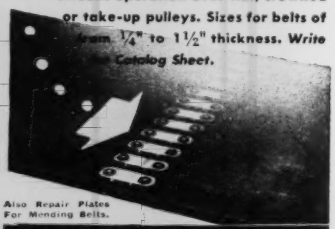

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make free use of both hands. Bracket of cast aluminum hooked over ladder rung carries 10¾ x 8½ in. platform of ¾-in. hardwood equipped with 5 x 8½ in. safety-walk tread material to prevent foot slippage. Total weight is only 7 lb. Platform is always level irrespective of angle of ladder. Device is claimed to increase efficiency and add to comfort of workers on ladders. While top hooks of aluminum bracket fit over one rung, bottom slots fit over next lower rung of ladder.—BEAU-IDEAL, INC., 823 S. WATER ST., SAGINAW, MICH.

Masonry-Cutting Saw

The Eveready Briksaw can be used for wet and dry cutting of all masonry products. A special wet-cutting kit is available for installing on saw originally equipped for standard dry cutting. It can be installed using only a screwdriver and pliers. A Toe-Matic control permits the operator to reset the cutting head at any desired angle, and to restore cutting operations by pressure of his foot. The Adjusta-Height provides the operator with control over the type of cut. An automatic blade-pressure spring adjusts the blade pressure to the hardness or softness of the material. The Briksaw blades are available in dry abrasive, wet abrasive or diamond types. They are made in sizes to fit most popular makes of masonry saws.—EVEREADY BRIKSAW CO., DEPT. EN-49, 1509 S. MICHIGAN AVE., CHICAGO 5, ILL.

Electronic Safety Device

Now available to contractors whose cranes or power shovels must work near transmission lines carrying high voltages is an electronic safety device —Electro-Alarm. The operator determines the safe distance for each job and pre-sets the unit. When the crane boom enters the danger zone a warning horn sounds within the cab. In the event of failure of the alarm itself, a red warning light flashes. Electro-Alarm is made in sizes for installation on all makes of cranes.—CHAMBERLER RADIO CONSTRUCTION CO., 745 PLEASANT AVE., FRESNO, CALIF.

High-Speed Intermittent Weld

Hobart No. 313 electrode is designed for making short, intermittent welds at high speed on all gages of steel in any position using either a.c. or d.c. straight or reverse polarity. This Class E-6013 electrode has fast operating characteristics together with a forceful spray-type arc. The arc can be easily started and restarted without scraping or hitting the electrode against the work surface. The tendency for this type of electrode to stick to the work piece is said to have been eliminated in this electrode. Hobart No. 313 electrode is available in 12-in. lengths in $\frac{5}{32}$ in. diameter and in 14 in. lengths in $\frac{1}{8}$, $\frac{5}{32}$ and $\frac{7}{16}$ in. sizes.—HOBART BROS. Co., HOBART SQUARE, TROY, OHIO.

High-Speed Diesel Trucks

New line of high-speed heavy-duty diesel trucks consists of five models in both conventional and six-wheeler design. All five are powered by a Federal-Hercules Model DWXLD diesel engine developing 142 hp at 2,600 rpm, and weighing only 485 pounds more than the present gasoline engine used for Federal models in this classification. The D-45 series will be available in three models with a choice of single or two-speed double-reduction rear axles; and with nominal ratings of 3½ to 5 tons, gross vehicle rating of 26,000 pounds, and a gross combination weight of 50,000 pounds. The D-645 six-wheeler series has a gross vehicle weight of 38,000 pounds, and is available in two models with a choice of tandem double-reduction or worm-drive rear axle. Both series are equipped with 10:00/20 tires, with larger tires available.—FEDERAL MOTOR TRUCK CO., 5780 FEDERAL, DETROIT 9, MICH.

Two-Man Powered Chain Saw

Latest addition to Timberhog line of portable power saws is a 36-inch two-man saw powered by a 4.2-hp. gasoline engine. Compact design and the use of strong die-cast aluminum parts result in light weight—saw, complete with guide bar, chain, guard, and helpers end, weighs 65 pounds. A diaphragm-type carburetor enables the engine to operate in any position without swivelling of the blade.—REED-PRENTICE CORP., DEPT. H-20, WORCESTER 4, MASS.

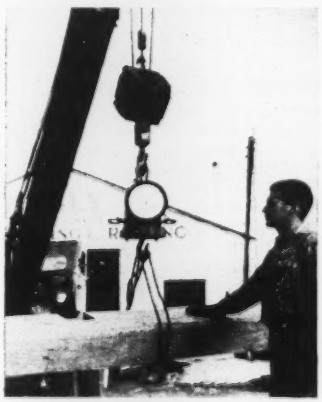
Levels in Three Directions

The Ken corner level is recommended for use on all parts of structures that must be plumb, straight and square. The horizontal and vertical vials are joined together by two aluminum Z-bars, in such a manner that the builder can plumb and square two sides of a corner in one operation. It is also possible to line up the top face of each brick when it is placed on the

mortar joint. The Ken level can be provided with an adjustable vial for plumbing inclined or tapering surfaces.—Singer-Kennedy Corp., 21 E. Van Buren St., Chicago 5, Ill.

Pneumatic Nailing Tool

Pneumatic nailing tool is designed to nail sheathing or sub-flooring at the rate of 40 to 50 nails a minute; with experienced operators driving as many as eighty 8d nails a minute. The unit can be used to drive nails straight or at an angle, and to a predetermined depth. Powered by an air motor, it requires 90 to 100 pounds of pressure. The Model 1-A will handle 7d, 8d, or 10d box or common nails. The nail hopper has a capacity of from 400 to 600 nails. —Azor Products Co., 683 Santa Fe Ave., Los Angeles 21, Calif.

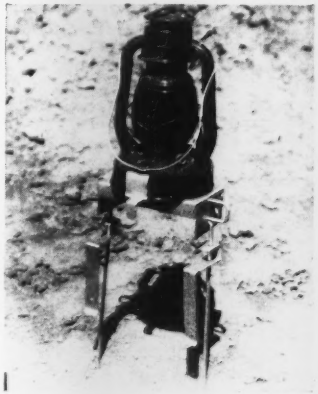


Loads Are Weighed as Lifted

Hydraulic scale is designed primarily for measurement of loads as they are handled by a crane. The Emery hydraulic cell converts force into corresponding fluid pressure which actuates a pressure indicator calibrated to read in pounds. The Emery units are available in three models having capacity ranges up to 30,000 pounds, and with 8½, 12, and 16-inch-diameter dials.—A. H. Emery Co., Stamford, Conn.

Diesel Power Unit

"Packaged" diesel power unit is capable of providing both electricity and mechanical driving power simultaneously. Two models are available rated at 135 hp. and 150 hp., respectively. Both models are equipped with 50-kw. generators. New power plant is called "Mech-Elec" unit. Generator can be operated without engaging mechanical drive.—Murphy Diesel Co., Milwaukee 14, Wis.



Safety Stand for Lanterns

Safety stand is designed to prevent lanterns from toppling or blowing over. The platform on the Viateer measures 4 inches wide x 7 inches long. The lantern base is gripped firmly by three upright reinforced steel clamps, one of which is of the spring-locking type. The stand is adjustable to assure an upright position for the lantern no matter where it is set. For greater security, the Viateer can be attached to a barricade by nails, screws, or bolts.—Pucel Enterprises, Inc., Cleveland, Ohio.

Clamshell Bucket on Lift Truck

Load-grab attachment for specialized materials handling by lift truck is 7/16 cu.yd. clamshell bucket. Unit mounts on sliding supports of basic load-grab as optional equipment. It is operated by a lever at the driver's right. Clamshell opens and closes by means of the same hydraulic power which spreads and contracts the arms of the standard load-grab. Standard lifting height of 8¼ ft. makes unit valuable aid in loading and unloading trucks and railroad cars.—Hyster Co., Portland 8, Ore.

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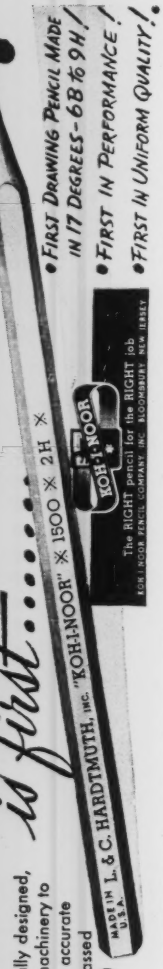

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Manufacturers' Publications

Fork Arms for Dozers—Fork arms for extending the use of bulldozers are described in a 4-page bulletin. The purpose of these arms, described in detail in the bulletin, is to convert the dozer blade into a carrying unit for moving supplies, materials, and small equipment over difficult terrain. The bulletin describes the action of the fork arms, and explains how they can be quickly attached or removed.—The Parkersburg Rig & Reel Co., Parkersburg, W Va.

High-Speed Loaders — A 24-page book captioned "Euclid Loader for High Speed Loading of Large Hauling Units" contains a large number of photographs showing the loader at work on various jobs Specifications on the operating characteristics of the Euclid are listed for each project. The catalog, Form No. J-405, contains a 2-page center spread illustrating and describing ten of the features claimed for these loaders.—Euclid Road Machinery Co., Chardon Road, Cleveland 17, Ohio.

Portable Electric Tools—Four-page circular describes all models of Thor Silver Line portable electric tools. These include drills, grinders, polishers, impact wrenches, and saws Brief specifications are listed for each tool and for the accessories which can be used with it.—Independent Pneumatic Tool Co., 175 State St., Aurora, Ill.

Magnesia Insulation — A 96-page manual is to be issued soon covering 85 percent magnesia insulation. The properties of that material will be discussed and information will be given concerning the determination of correct thicknesses, application and finishing procedures, and insulation maintenance. There are 15 tables of data on 85 percent magnesia, a glossary of trade terms, and other valuable information. Requests on business letterhead. — The Magnesia Insulation Mfg. Assn., 1317 F Street, N.W., Washington 4, D. C.

Vertical Circulating Pumps—A 12-page illustrated bulletin describes a complete line of single and multi-stage vertical circulating pumps. Bulletin No. 48-6050 discusses pumps in sizes from 5 to 12 inches in capacities from 20 to 3,000 gpm with heads as required; and pumps larger than 12 inches in capacities of 1,500 gpm and up with heads as required. Designed primarily as cooling tower pumps, these large vertical pumps are suitable for many heat-exchange applications where medium to high-capacity pumps are required. They are also suitable for use as dewatering pumps, river intake pumps and as drainage pumps.—Byron Jackson Co., Pump Division, Terminal Annex, Box 2017, Los Angeles 54, Calif.

Steam Hose—Improvements in the Inferno line of steam hose are listed in a 4-page folder. This folder describes the heat-resistant carcass composed of multiple layers of tightly braided galvanized steel wires; the special construction which causes steam to be diffused instead of violently escaping should the hose be damaged; the tough, red cover; and flexibility and ease of handling. The Inferno hose is made in sizes from ½ to 2-inches inside diameter, and in maximum lengths of 50 feet.—Goodall Rubber Co., Whitehead Road, Trenton 4, N. J

Anti-Bacterial Cement—Folder explains how anti-bacterial cement can be used to make concrete that actually kills bacteria and fungi on contact. The folder lists several recommended uses for this kind of concrete. Also listed, are the results of laboratory tests conducted on concrete made from this cement; tests for both its anti-bacterial properties, and for its structural properties as a standard concrete.—North American Cement Corp., 41 E. 42nd St., New York 17, N. Y.

Automatic Slope Meter — Bulletin describes Slope Meter for use in making accurate grades and slopes. This device is recommended for use on all sizes of tractors, bulldozers, scrapers, and graders. The bulletin explains how the Slope Meter works, and contains complete information on how to install it on any piece of equipment.—Wm. H. Ziegler Co., Inc., 2929 University Ave., S. E., Minneapolis, Minn.

Insulating Cellarless Houses—How to insulate cellarless houses against condensation and heat loss is described in Bulletin RBH-5-49. This bulletin describes the characteristics of Rubatex insulation hardboard, and also contains detailed construction diagrams which the architect can trace on his own plans. Standard forms of specification are also included.—Rubatex Division, Great American Industries, Inc., Bedford, Va.

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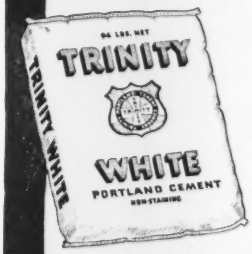

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READER COMMENT

Ozone still used at Whiting, Ind.

Sir: I was disturbed to read a report in ENR June 9, p. 51, stating that ozone had been replaced by activated carbon at Whiting, Ind. and ozonation had been discontinued. Nothing could be farther from the truth. The city is not only still using ozone but also feels that it would be impossible to treat the water without it.

A four- or five-fold increase in pollution since 1940 has made the existing ozone capacity inadequate at times and the use of ozone must be supplemented by activated carbon. However, the city plans to augment the existing capacity with additional ozone equipment in the near future.

It might be of interest to know that, during those months when the present ozone capacity is ample to handle the pollution without supplementary carbon, the city saves $3,000 a month over the cost of treating the same water with carbon alone. This represents a saving of $50 per million gallons.

VICTOR HANN,
Director, Ozone Processes Division
The Welsbach Corporation
Philadelphia, Pa.

Sir: The report on p. 51, ENR June 9, that ozonation has been discontinued at Whiting, Ind., is incorrect.

Despite any so called conclusions that five months of intensive experimentation on both plant and laboratory scale proved ozone as an oxidizing agent unsatisfactory or incapable of producing a palatable water, the actual fact is that years of ozonation in our Whiting plant have proved that ozone is an economical, highly satisfactory, and successful means of helping us solve our water problems.

There are practically continuous weeks during the spring, summer and early fall months that we rely entirely upon ozone with no carbon dosage whatever, along with our normal rapid sand filtration process, to deliver a pleasing, palatable, and entirely acceptable water to the city.

During other periods, especially in winter, we use ozone supplemented by carbon dosage as determined by threshold odor determinations.

We have yet to see a "completely odor-free" water supply anywhere. But we do know by actual experience that with ozone a water can be delivered with thresholds from 2 to 15 and be palatable and acceptable without complaint from consumers. This statement is made with all due respect to past claims that water above 2 is not acceptable.

Ozonation is in continuous use in our plant and we are well pleased with its performance.

STEPHEN J. DADO
Water Superintendent
Whiting, Ind.

R. D. Johnson

Sir: In the July 14 issue of Engineering News-Record the death, on June 28th of Mr. R. D. Johnson was reported. I would like to add these facts to the obituary notice:

Mr. Johnson was best known in the engineering profession as the inventor of the differential surge tank which revolutionized the design of hydro-electric power projects in making it possible to use long feeder lines with confidence and to achieve close regulation of the power generating units fed by long conduits. Since the early part of the century, hundreds of differential surge tanks have been built in power projects all over the world.

Mr. Johnson was equally well known for applying the differential principle to the design of the so-called Johnson valve for controlling the flow of pipe lines and of reservoir outlets. Such valves, or copies of same under other names, are in use in this country and abroad by the thousands.

EUGENE E. HALMOS
Design Consultant
Knappen Tippetts Abbett
Engineering Co.

Famous Bridge A Myth

Sir: Referring to my article on "The World's Most Notable Bridges" in ENR Dec. 9, 1948, the following correction should be recorded. One of the world's most famous spans never existed! This refers to the record-breaking span of 390 feet which had been credited to a timber bridge at Wettingen in Switzerland, supposed to have been built by the Grubenmann brothers about 1758. The error originated in 1803 in a published engraving by Chr. Mechel, and has since been perpetuated in all of the literature on the subject. From 1913, the German Museum at Munich exhibited a scale model of the supposed Wettingen bridge as the world's greatest timber span. Recent historical research by Jos. Killer, recorded in his book "Die Werke der Baumeister Grubenmann" (Zurich, 1941), reveals how the error started. Ulrich Grubenmann's drawing of his bold initial proposal of a single 390-ft. span for a bridge over the Rhine at Schaffhausen was mistakenly used by Mechel as a representation of the smaller span subsequently built at Wettingen. (The Limmat River at Wettingen is only 164 feet wide.)

With the new information, the data on the three famous timber bridges built by the Grubenmann brothers are tabulated below.

All of these bridges were destroyed by Napoleon's troops in 1799.

The human side-lights are interesting. When Ulrich Grubenmann came to Schaffhausen in 1755 at the invitation of the officials, he indignantly left the town after the first conference. "The fools!" he exclaimed. "They kept on telling me how they wanted me to build the bridge and they never asked me how I wanted to build it." He returned some time later with a scale-model of his proposed design. The town officials laughed at him, and declared that a span of that length (390 feet) could not stand up. Instead of replying, the master carpenter put the whole weight of his body upon the model. "If the model can carry me", he declared, "then the bridge will will also carry a couple of wagons."

The officials finally engaged him, but only on the condition that he change the design to a two-span bridge, utilizing a center pier remaining from a prior structure. It is said that Grubenmann, to prove his convictions, outwitted the town officials by building the structure so as to be self-supporting without actually resting on the middle pier except under load.

The Wettingen bridge, built later by the two Grubenmann brothers, represented a further advance in the art. It is believed to have been the first timber span using a true arch—a solid curved arch rib built up of timber layers, whereas the prior timber spans used triangular or polygonal tied arches with inclined radiating struts.

D. B. STEINMAN
Consulting Engineer

Constructed	Location	River	Span	Builder
1756—1758	Schaffhausen	Rhine	171—193	Hans Ulrich Grubenmann
1756—1757	Reichenau	Rhine	240	Johannes Grubenmann
1764—1766	Wettingen	Limmat	200	Both brothers

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Raymond's successful experience for more than a half century has thoroughly proved these six outstanding advantages of Raymond Concrete Piles. These benefits, plus Raymond's expert personnel and specialized equipment, result in sound, dependable substructures that meet every requirement. You are invited to consult our engineers for the facts.

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Every Raymond Concrete Pile is a permanent achievement, accomplished by a series of carefully planned steps which control and coordinate progress.

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The use of rugged equipment and heavy hammers permits driving to high resistance, and the full pressure developed during driving is carried to solid foundation.

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Regardless of variations in subsoil conditions, Raymond piles can be driven to any depth required to obtain uniform bearing capacity for the whole foundation.

4 **ENGINEERED FOR THE JOB**

Raymond can provide the type of pile specifically adapted for every job.

5 **SAVING IN CONSTRUCTION COST**

Raymond's long experience on all kinds of jobs, the ready availability of equipment and the relatively shorter lengths of Raymond piles compared to some types, assure positive economy in foundation costs.

6 **COMPLETE SATISFACTION**

By the satisfactory completion of over 10,000 contracts, involving more than 50 million feet of piling, Raymond has established a world-wide record of achievement.

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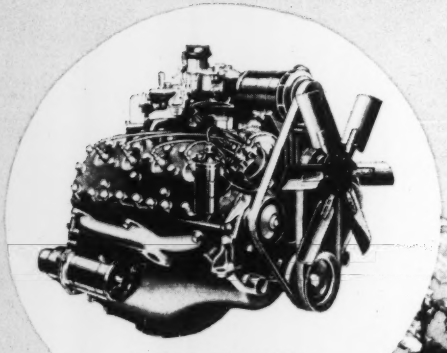

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Schramm, Inc., of West Chester, Pa., has been purchasing Ford engines for 14 years, using them with Schramm compressor conversion heads in the Model 60 Schramm engine-driven compressor that has won world recognition. Illustrated is the new self-propelled crawler in use as a weed burner. The Ford 239 Industrial Engine is standard equipment, with four cylinders altered to act as air compressors. The remaining four cylinders furnish the motive and compressing power.

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